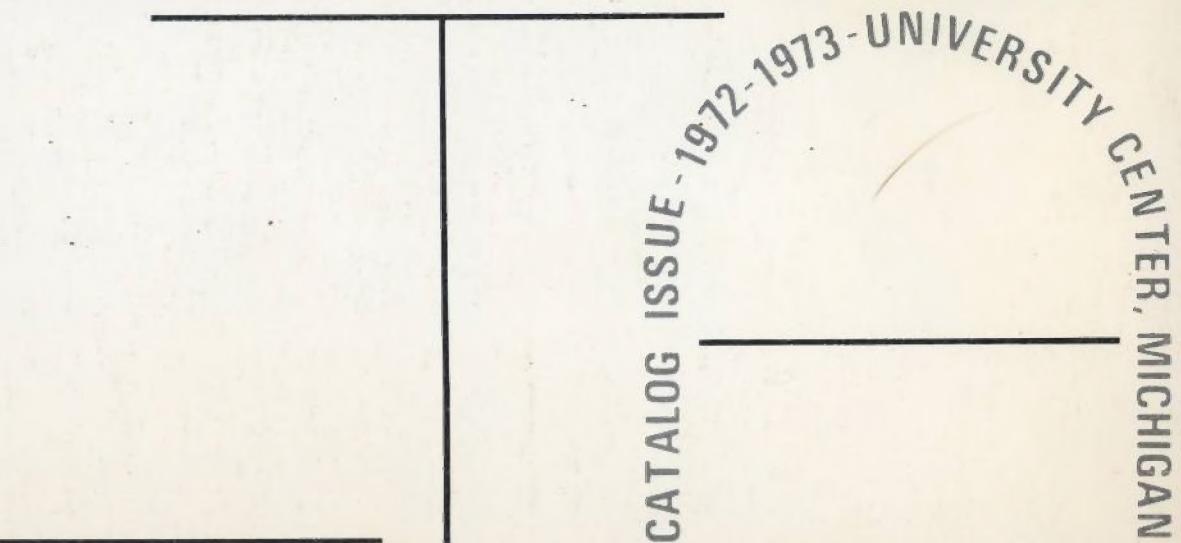
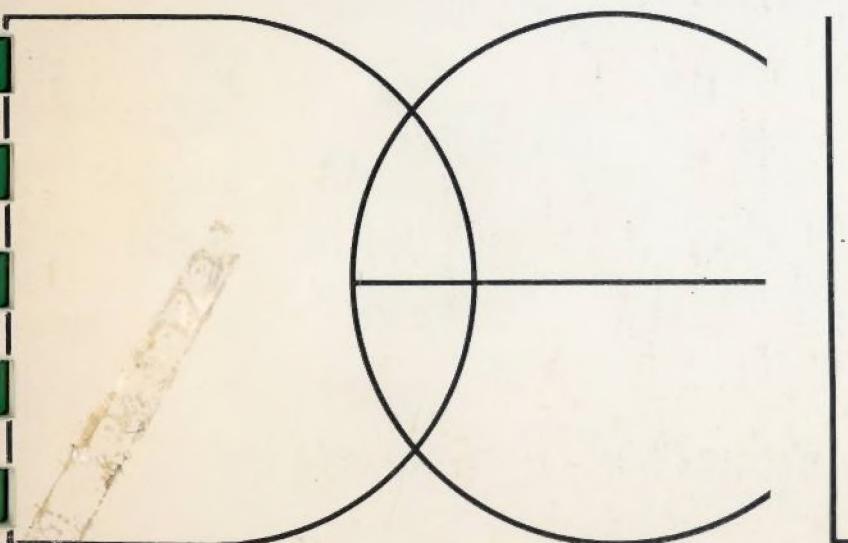




G. Pease



1972-1973 GENERAL CATALOG

DELTA COLLEGE

UNIVERSITY CENTER, MICHIGAN 48710

A Publicly Supported Community College Serving the
Tri-County Area of Bay, Saginaw and Midland Counties.

BOARD OF TRUSTEES

DONALD D. HALL
Chairman

A. T. LIPPERT
Vice-Chairman

OSCAR M. ANDERSON

DR. ROBERT G. APP

ELWYN J. BODLEY

WILLIAM R. COLLINGS

PHILIP C. DEAN

JOSEPH L. STEPHENS

MRS. PAUL N. SUTTON

ADMINISTRATIVE OFFICERS

DONALD J. CARLYON
President

WILLIAM J. YANKEE
Executive Vice-President

M. GENE ARNOLD
Administrative Dean

WILLIAM J. BALLARD
Director of Television

MICHAEL L. CROVELLA
Business Manager

KARL F. DUBOIS
Dean of Community Affairs

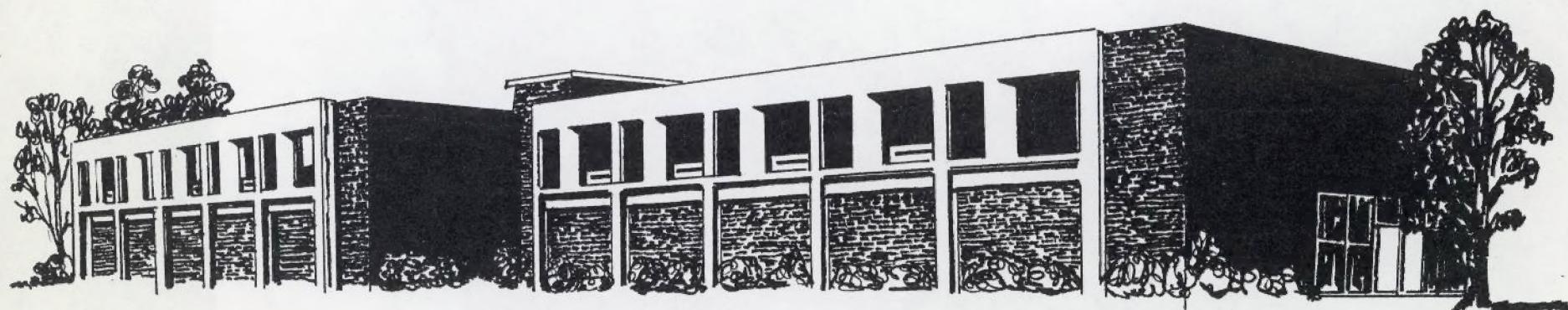
PALMER B. KERN
Dean of Student Affairs

JOHN H. KRAFFT
Director of
College Relations

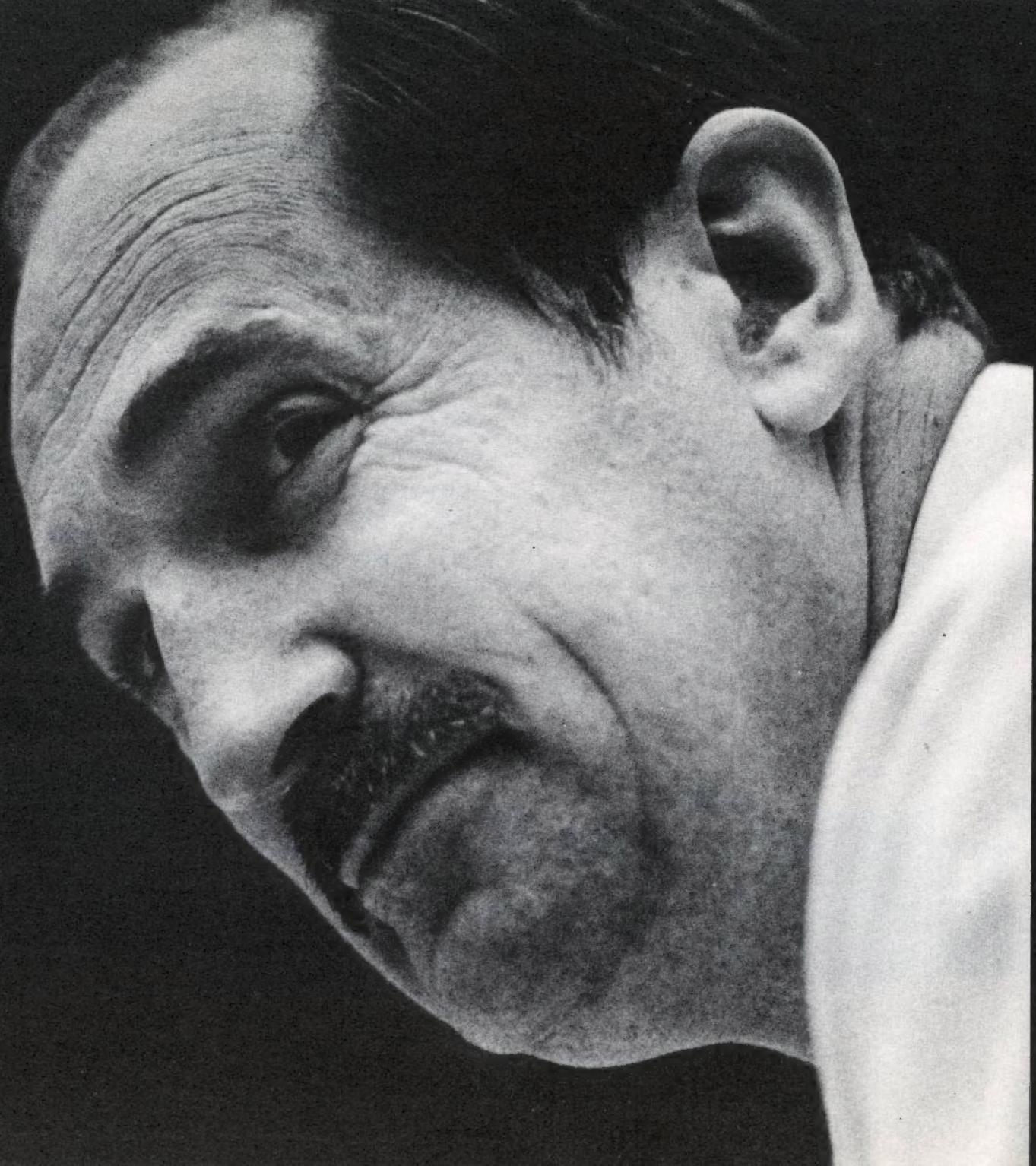
JOHN L. KRAWCZYK
Controller

ARTHUR J. OETTMEIER
Dean of Academic Affairs

MARTIN P. WOLF
Director of Research and
Development



NEW FINE ARTS AND CLASSROOM BUILDING



PRESIDENT'S MESSAGE

Delta College is a community college created by and for the people of Saginaw, Bay and Midland counties. At Delta we make it our business to relate to people. That's our primary task and we think we do it well.

Last year, for example, nearly 100,000 people took advantage of our academic courses, community services and our television programming over WUCM-TV (Channel 19). An additional 5,000 enrolled in community and women's education programs while over 40,000 utilized the conference and meeting facilities as well as the Planetarium.

We attract the "hungry" students. Nearly 75% work full or part-time while attending classes. About 52% are in General Education programs, while 48% are enrolled in career programs. Many students plan to transfer to senior institutions. Their average age is 24 years, slightly older than those in the four-year institutions. Moreover, 650 of them are service veterans who are serious about their education and glad to be here.

We offer our students programs designed to meet their individual needs, not classes served up simply as a matter of course.

When our students can't get to the College, we take the College to them through five extension centers. Two of the centers serve the inner city, one in Saginaw and the other in Bay City.

The people of Saginaw, Bay and Midland counties care for their fellow citizens. If they did not they never would have created Delta College. The College is deeply concerned with its social responsibility to the tri-counties as well as its obligation to provide a broad spectrum of educational opportunity for all the citizens of the district.

One area where Delta has made a considerable impact on the community is through its career education programs.

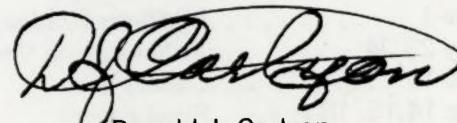
The college has been acclaimed by the business, industrial and professional community for graduating students in such diverse program areas as the Health Sciences, Engineering Technologies, Business, Law Enforcement, Broadcasting, Public Service and many others.

In all, more than 40 of these two-year, degree-granting programs are offered, each designed to direct a skilled technician, para-professional, or health auxiliary into a waiting job market.

Moreover, another 35 programs are in various stages of planning with advisory committees helping to assess the need and develop the curriculum.

Traditionally our liberal arts and sciences curricula draw students from all four quartiles of the high school graduating classes in the district. Last fall (1971), for example, 30% of our Freshmen students were graduated from the top quarter of their class, while 25% came from the second quartile. About 28% were listed in the third quarter, with 17% from the fourth quarter category. This profile reflects a balanced student make-up, one which we intend to maintain.

Faithfully,



Donald J. Carlyon
President

CALENDAR 1972

WINTER TERM

Mon, Tues, Wed . . .	Jan 3, 4, 5	Registration
Thurs	Jan 6	Classes Begin
Thurs	March 2	Midterm Grades Due
Fri	March 31	Good Friday, Recess 12 Noon
Fri	April 14	Classes End
Mon, Tues, Wed . . .	April 17, 18, 19	Final Exams
Mon	April 24	Grades Due 11 a.m.

SPRING TERM

Thurs, Fri	April 27, 28	Registration
Mon	May 1	Classes Begin
	Memorial Day	No Classes
Wed	June 21	Classes End
Fri	June 23	Grades Due

SUMMER TERM

Fri	June 23	Registration
Mon	June 26	Classes Begin
		Independence Day . . . No Classes
Wed	Aug 16	Classes End
Fri	Aug 18	Grades Due

FALL TERM

Mon, Tues, Wed	Aug 28, 29, 30	Registration
Thurs, Fri	Aug 31, Sept 1	Faculty Orientation
Tues	Sept 5	Classes Begin
Wed	Nov 1	Midterm Grades Due
Thurs, Fri	Nov 23,24	Thanksgiving Vacation
Wed	Dec 13	Classes End
Thurs, Fri, Mon	Dec 14,15, 18	Final Exams
Wed	Dec 20	Grades Due 4:00 p.m.

CALENDAR 1973

WINTER TERM

Wed, Thurs, Fri . . .	Jan 3, 4, 5	Registration
Mon	Jan 8	Classes Begin
Wed	March 7	Midterm Grades Due
Tues	April 17	Classes End
Wed, Thurs, Fri		
morning	April 18, 19, 20	Final Exams
Mon	April 23	Grades Due 9:00 a.m.

SPRING TERM

Thurs, Fri	April 26, 27	Registration
Mon	April 30	Classes Begin
	Memorial Day	No Classes
Wed	June 20	Classes End
Fri	June 22	Grades Due

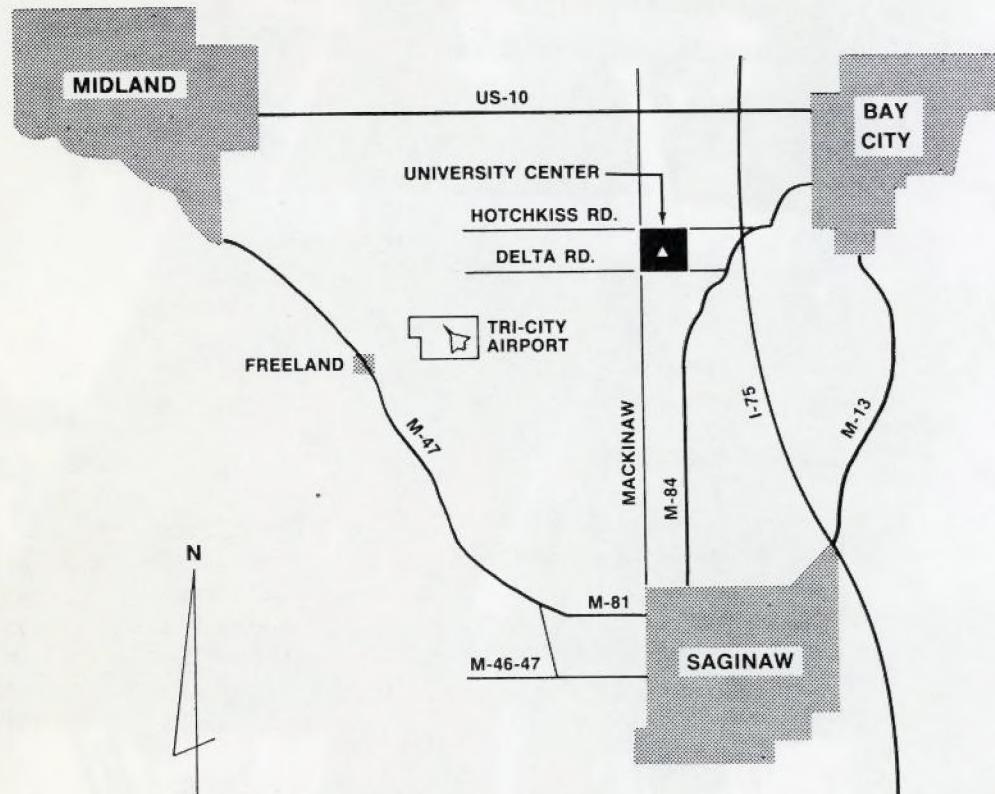
SUMMER TERM

Fri	June 22	Registration
Mon	June 25	Classes Begin
		Independence Day . . . No Classes
Wed	Aug 15	Classes End
Fri	Aug 17	Grades Due

FALL TERM

Mon, Tues, Wed	Aug 27, 28, 29	Registration
Thurs, Fri	Aug 30, 31	Faculty Orientation
Tues	Sept 4	Classes Begin
Wed	Oct 31	Midterm Grades Due
Thurs, Fri	Nov 22, 23	Thanksgiving Vacation
Wed	Dec 12	Classes End
Thurs, Fri, Mon	Dec 13, 14, 17	Final Exams
Wed	Dec 19	Grades Due 4:00 p.m.

TABLE OF CONTENTS



General Information.....	9
Admissions and Financial Information.....	13
Academic Information and Regulations	17
Student Services and Student Activities	21
Programs of Study.....	27
Transfer Programs	27
Career Programs	33
Course Descriptions.....	51
Community Services.....	89
Faculty.....	95
Administrative Staff.....	103
Counselors.....	105
Support Staff	106
Index.....	107



Delta College is a community college with comprehensive aims and objectives determined by the people of Michigan, the citizens of the Delta College District, the faculty, staff, and Board of Trustees. The College is dedicated to the immediate educational needs of the Delta community and also to the present and future educational needs of all its constituents above high school age regardless of age or previous academic achievement. Delta College is further committed to continue and expand its participation in the social, cultural, and economic development of the Delta Community.

More specifically, the mission of Delta College is to provide the following educational services:

- Transfer courses designed to provide lower division and pre-professional programs which prepare students for entry into the four-year institutions of their choice.

- Technical, vocational, and semi-professional programs designed to prepare students for employment upon graduation.
- Continuing education designed to provide an expanding opportunity for individual and vocational growth and development.
- Guidance and counseling services to students in the areas of educational, social, personal, and career development.
- Community services designed to serve the needs of an expanding tri-county region.
- Cultural programs and services designed to enrich the life of the community and its citizens.
- Additional services designed to make the Delta College faculty and staff available to the tri-county area for consultation, coordination, assistance, and participation in the social, economic, cultural, and educational future of the Delta Community.



Origin, History, and General Purpose of Delta College. Delta College, a comprehensive community college, opened in 1961 after six years of planning and study. The meetings of representatives of the three counties in which the proposal for the College was developed began in 1955. Legislation was submitted to the State of Michigan in 1957, and in the same year the voters of Bay, Saginaw, and Midland Counties formed a community college district under Act 182 of the Public Acts of 1957 for the purpose of financing, building, and operating a new institution of higher learning. The three counties, with a population of 400,000 people, represent one of the rapidly growing sections of the State.

Because the College is locally financed, special consideration is given to students whose legal residence is in the tri-county area. Tuition charged for these students is substantially lower than that charged for others living outside the tri-county area.

Though Delta College is a new and independent institution, it is maintaining without interruption the educational opportunities previously offered at Bay City Junior College, which was established in 1922 by the Bay City Board of Education and was open to non-resident students at a modest non-resident tuition charge. In September 1958, the tri-county college district was formed and the district paid the Bay City Board of Education the difference between the resident and non-resident tuition for students in the three counties not in the Bay City district. This arrangement continued for three years, from September 1958 through August 1961. During this time the members of the staff and faculty of Bay City Junior College assisted in planning for the new college and at the opening in September 1961, the Bay City Junior College faculty became part of the faculty of Delta College. In May 1958, the tri-county college board voted unanimously to make the alumni of Bay City Junior College alumni of the new college. Microfilm copies of Bay City Junior College records are now maintained at the Bay City Board of Education.

Location and Environment. The campus is located in the approximate center of the triangle formed by Bay City, Midland, and Saginaw, but somewhat nearer to Bay City than to the other two cities. It consists of a tract of 640 acres and is bounded by Mackinaw, Hotchkiss, Four Mile, and Delta Roads in Bay County. The buildings are situated in the center of this section.

The main portions of the central building, including the Library, the Commons, and two Concourses, surround a landscaped open court one acre in area. Other areas in the central building and in ten wings accommodate faculty and administrative offices, classrooms, science laboratories, a gymnasium seating 3,000, a small auditorium seating 266, a book store, and a technical area including educational television studios, crime, X-ray and auto-tutorial nursing laboratories, a data processing center, language and audio-visual centers and other technological aids. The open-circuit public television station of Delta College, operating on Channel 19 (WUCM-TV), is located in a separate area of the college. On-campus dormitories house 160 students. There are parking areas to accommodate 3,000 cars.

A Multi-million Dollar Campus Expansion Project is presently underway including a Fine Arts Complex; Vocational-Technical Center, at the post-high school level; Para-Medical Building; College Center; T.V. and Theater Complex, and additional Physical Education facilities.

Accreditation and Institutional Affiliations. Delta College is accredited by and is a member of the North Central Association of Colleges and Secondary Schools. Delta College is also a member institution of the American Association of Junior Colleges, the Michigan Association of Junior Colleges and both the American and Michigan Association of Collegiate Registrars and Admissions Officers. Additionally, Delta College is a member institution of the Michigan Academy of Arts, Sciences & Letters.

National League for Innovation. Delta College is a charter member of the National League for Innovation in the Community College. League membership includes fifteen of the most innovative community college districts in the nation. The stated aim of the League for Innovation is to encourage and evaluate innovation and experimentation designed to improve all aspects of college operation.

Membership in the League constitutes a significant recognition of the Delta College District comprising Bay, Saginaw, and Midland counties. As a charter member, Delta College is committed to:

- (1) a program of innovation, experimentation and improvement.
- (2) willingness to share the fruits of such innovation.
- (3) a cooperative program with other districts on the solution of common problems.
- (4) an evaluation of experimentation and the application of the results of innovation in the orderly operation of the district's programs.

The President of Delta College serves as a member of the Board of Directors of the League for Innovation. Delta College has assigned itself the task of developing instructional innovations to broaden the institution's educational impact.

A sampling follows:

- Auto-Tutorial Nursing (multi-media)
- Team Teaching Geography
- Intensified Learning
- Open Circuit Television Instruction
- Computerized Evaluation and Analysis
- Off-campus Education Services
- Interdisciplinary Travel Seminars
- Integrated Basic Science for Allied Health Students
- Institutional Research
- Developmental Reading Program
- Expansion of Independent Study Programs
- President's Credit Seminar in Contemporary Problems
- Para-Professional Student Services

Master Campus Plan. The Delta College Long Range Development Plan was first approved in 1969 as a working document providing planning assistance to the Board of Trustees, Administration and the Michigan Department of Education. The Plan provides for a campus of the future designed to serve approximately 15,000 students by the mid-eighties. From institutional objectives,

immediate and long-range needs are identified and translated into physical development. In addition to site development, facility requirements include: an Allied Health Center; a College Center and expanded Learning Resources Center; Vocational-Technical Center; expanded Physical Education facilities and a Communications Arts Center. The Fine Arts & Classroom Building, under construction, will be ready for service in September of 1972.

Institutional Affiliations. Delta College's accreditation provides academic affiliation with state and outstate colleges and universities, thereby insuring Delta students easy and rapid transferability. Delta College maintains liaison with transfer institutions by preparing, with their assistance, curricula guides indicating specific academic requirements. Moreover, with their help, Delta College follows through on students' progress once they have transferred.

Delta College Credit Programs. Programs of study in Delta College day and evening course work are designed to serve students above high school age with a variety of interests and objectives.

The student who aims to complete liberal arts studies supplemented by appropriate specialized subject matter courses which will prepare him for major concentrations and professional objectives at the senior college of his choice should plan to follow the curriculum outlined for that institution as he earns an associate degree at Delta College.

The student who aims to prepare himself directly for employment should enroll in a vocational-technical-associate degree curriculum or a certificate curriculum.

The student who wishes to enroll in courses to satisfy personal interests or to strengthen occupational competencies may do so without enrolling in a particular curriculum.

The student who is deficient in preparation for the program of his choice may enroll in courses designed to provide that preparation.

Admission procedures are designed to furnish the student and Delta counselors with information necessary to plan the student's initial program.

The Programs of Study section of this catalog contains general information on transfer programs in addition to specific requirements of the major colleges and universities in Michigan. Vocational-technical-curricula are outlined in the Course Description section.

Continuing Education. Questions concerning semester offerings can be directed either to Student Services or to the Associate Dean for Continuing Education. Delta not only offers its district service through its Continuing Education course work, it also accepts service from the community by hiring professional people from the area to teach on a part-time basis. Through its thorough consideration of these people's training, professional activities, and work-

related experience, Delta insures that a Continuing Education course is commensurate with day courses in academic objectives set forth, instruction given, and totality of program offered.

COMMUNITY SERVICES

Introduction. Community services have existed at Delta College since 1961. A specific direction was determined by the college Board of Trustees when the Office of Community Affairs was established in 1967. The activities described reflect the intent of Delta College to become a relevant part of the lives of the men, women, and children in the counties of Bay, Midland, and Saginaw.

Community Services include educational, cultural, recreational, support and research programs. Although these programs and services are frequently considered to be beyond academic classes and student activities, the fact that both students and faculty actively participate is an indication of our commitment to social relevancy.

Present Community Services

Community Education Programs
Women's Education Programs
Conference Development
Advisory Committees
Cultural Activities
Public Television (WUCM-TV)
Career Training Programs
Public Relations Designs
Student Volunteer Program

Planetarium
Speaker's Bureau
College Tours
Travel Programs
Community Research
In-Service Training
Institutes, Seminars, Workshops
General Consulting

The Community Services Team

Karl F. DuBois, Dean	John H. Krafft, Director
College Relations	Ronald J. Crossland, Assistant Dean
Community Education	John L. Briggs, Director
Conference Coordination	Martin P. Wolf, Director
Research & Development	Marguerite B. Saro, Director
Women's Education Programs	Westbrook Walker, Director
Planetarium Programs	Robert Roman, Chief Faculty Advisor
Student Volunteer Programs	William J. Ballard, Director
WUCM-TV Channel 19 Television	Karl F. DuBois, Dean
Office of Community Affairs	

(For Further Information see page 89)

Who to Contact – at Delta College**Extension**

Activities	Director, Student Activities	296
Add a course.....	Office of the Registrar	466
Application.....	Admissions Office	328
Average (Grade Point)	Office of the Registrar	466
Career Counseling.....	Counseling Office	321
Certificate requirements	Office of the Registrar	466
Change courses	Counseling Office	321
Change program.....	Counseling Office	321
Credits (Accumulated worth)	Office of the Registrar	466
Degree requirement	Office of the Registrar	466
Draft (Status, deferment)	Office of the Registrar	466
Drop a course	Office of the Registrar	466
Employment.....	Placement Office	264
Illness or injury (immediate treatment) ..	Health Services	250
Incomplete grade.....	Instructor	—
Job (On or off campus)	Placement Office	264
Loans, grants, scholarships.....	Financial Aids Office	264
Lost and Found	Security Office	325
Military (see "Draft")	Office of the Registrar	466
Personal Problem.....	Counseling Office	321
Public Relations.....	College Relations Office	206
Refund (Tuition).....	Business Office/Registrar	214/466
Registration.....	Office of the Registrar	466
Social & Cultural Event Tickets.....	Cashier	270
Social Security Benefits.....	Office of the Registrar	466
Sports.....	Health, Physical Education, and Recreation Office	241
Student Government	SAC Office	686-0421
Transcript.....	Office of the Registrar	466
Transfer (To another college)	Counseling Office	321
Transferability	Counseling Office	321
Tuition deposit.....	Cashier	270
Varsity Sports.....	Health, Physical Education, and Recreation Office	241
V.A. Benefits.....	Office of the Registrar	466
Withdrawal from College	Office of the Registrar	466

LEARNING RESOURCES CENTER

The Library of Delta College is a part of the Learning Resources Center and operates as an integral segment of the educational program. Acquisition of materials and planning for the operation of the library started ten years ago. The standards of the Association of College and Research Libraries, a section of the American Library Association, were met from the start of operations. Books, journals, magazines, newspapers, pamphlets, microfilm, records and other types of library materials are available for student and faculty use. At present the collection numbers more than 70,000 volumes with back files of periodicals. The Library is also a selective U.S. government documents depository; a number of United States government periodicals and series are received as these documents are published. Library orientation is available for groups or on an individual basis. A book-locator service will attempt to procure, through purchase or borrowing, books needed by a student or faculty member. Other services provided by the Library for students and faculty include: use of typewriters and electronic calculators, and a study area in the East Concourse.

The Audio-Visual Division of the Learning Resources Center provides the equipment and materials used in all the academic and service programs of the college. The latest and finest equipment is available through this section of the Learning Resources Center. Some of this equipment may be used by students as well as faculty. This section also maintains audio-visual laboratories for individual instruction and study.

The Graphics Division of the Learning Resources Center provides art and photographic work for the entire College. With artists and a photographer available, this division provides an important service for the learning environment of Delta College.



ADMISSION

Admission to Delta College. All high school graduates whose legal residence is in-district (Saginaw, Bay or Midland County) are eligible to apply for admission to Delta College. Non-district applicants are also eligible to apply. Acceptance is based upon previous academic work, a record of good citizenship, and an expressed sincere desire for additional education. Because of diverse curricular offerings, Delta College is able to serve students of varying backgrounds. It is essential, however, that the student be well prepared for the curriculum he wishes to follow. To this end, the results of placement tests, the high school records, and requirements of the curriculum are carefully considered by the student and his Delta counselor. An admissions classification system, on the basis of the student's educational background and potential abilities, is used for proper placement of the student in classes. Students will be classified for admission purposes in one of the following categories: (1) regular admission, (2) provisional admission, (3) special admission, (4) guest admission, (5) transfer admission.

(1) Regular Admission. The applicant must submit a transcript of credits from an accredited high school, or its equivalent, and demonstrate his potential to pursue college level study as determined by high school achievement.

(2) Provisional Admission. Applicants whose educational background needs strengthening in certain areas are normally admitted on a provisional basis and may be limited to twelve credits. Students admitted provisionally may be required to supplement their background and achievement before being classified as regular students. Provisional students shall become regular students after demonstrating ability to do college level work.

An applicant submitting acceptable high school equivalency scores on the

General Educational Development Test will be considered for provisional admission after evaluation of his previous high school record and his achievement on the G.E.D. Tests.

Delta College is a testing center for the G.E.D. Tests. Arrangements to take these tests may be made at the Student Services Office. It is recommended that students complete their high school certificates where opportunity exists to do so.

(3) Special Admission. Special students include early entrance high school students, students with incomplete admission materials, and degree holding students who wish to be admitted to specific courses.

(a) **Early Entrance for High School Students.** High School students admitted for early entrance may be admitted to specific courses with the permission of their high school principal and when their records of high achievement and potential satisfy the prerequisites for the specific course elected.

(b) **Degree Holding Students.** Applicants holding college degrees may be admitted for particular courses if they satisfy the prerequisite of these courses.

(c) **Incomplete Admission.** Special students may be admitted prior to the completion of the admissions requirements upon approval of the Director of Admissions. Such students will be required to complete admission requirements by the end of the semester to determine their status for the next semester.

(4) Guest Admission. Students enrolled in other institutions who wish to attend Delta College as guests may submit an approved Michigan Uniform Undergraduate Guest Application and pay all matriculation and advance deposit fees required by Delta College. Guest student applications may be secured either from the Delta Admissions Office or from the registrar of the institution at which the student is enrolled.

(5) Transfer Admission. Transfer students are admitted to Delta College on an individual basis. All procedures applicable to the admission of new students will be followed. Additional procedures required the submission of all academic records and a Personal Evaluation Form from each institution attended. After admission, all requirements of Delta College must be met. Transfer students with academic achievement of less than "C", if admitted, will be admitted on probation. Transfer students should submit the records of their academic achievement as early as possible so that the records can be evaluated prior to counseling and preregistration course selection. Transfers from regionally accredited institutions with "C" or better and with sophomore standing are excused from placement tests.

Admission of International Students. International student applicants will generally follow the admission procedures for regular students. Delta College requires that international students be proficient in the English language before entering course work. An additional test may be required to establish the fact of proficiency before admission. International students are admitted on an individual basis and should contact the Director of Admissions concerning the specific procedure which they should follow. Upon acceptance to college, a form I-20 will be issued to facilitate receipt of a student visa.

It is the student's responsibility to arrange for a student visa through the United States Immigration and Naturalization Service. International students should contact the nearest United States Embassy for information and procedures regarding the procurement of a student visa. Each student will be required to purchase student insurance on registration day unless adequately covered by a health protection plan and the student must assume all financial obligations incurred while attending Delta College, including travel to and from his home-land. Delta College assumes no financial responsibility for any student and no special funds are set aside for international students. Admission to Delta College is open to all students who meet admission requirements regardless of race, creed, or color.

Procedures of Application to Delta College. Application materials may be secured at local high schools, or from the Office of Admissions.

Former Delta Students who wish to re-enroll in the college need to request re-admission prior to re-enrolling. Re-admission applications may be secured from the Admissions Office.

A. Procedures of Application

1. Fill out application.
2. Request the high school to submit a transcript of credits and a personal evaluation form.
3. Request a transcript of credits and a personal evaluation form for all post-high school education from the registrar of each institution previously attended.
4. Submit the \$10.00 matriculation fee.

In order for an application to be processed, it should be accompanied by a \$10.00 matriculation fee. The matriculation fee is a one time only fee and will not be refunded unless a prospective student is refused admission by Delta College.

B. Procedures for Re-Admission

1. Fill out re-admissions application.
2. If applicable, request a transcript of credits and a personal evaluation form for all post-high school education from each institution previously attended.

Admission Notification. Notification of admission, re-admission, or denial may be expected within two weeks after receipt of application by the college.

Out of District Tuition, left column below, is now \$24.00 per credit hour and Out of State is \$36.00. Tuition refund policy, right column below, is being revised and will be available July 1, 1972. You may call the college at (517) 686-0400 for particulars.

NOTICE

TUITION INFORMATION

Advanced Tuition Deposit. An advance tuition deposit of \$20.00 is required and should be paid during pre-registration period. The advance tuition deposit may be refunded if the prospective student cancels his application and requests a refund in writing, at least one day prior to the first day of registration.

Tuition and Fees

	In District	Out District	Out State
Tuition per Credit Hour (day and evening)	\$12	\$20	\$30
Late Registration	\$5	\$5	\$5
Transcripts (first)		No Charge	
(additional copies)	\$1	\$1	\$1

Subject to change without notice.

Student Activity Fee — \$.50 per credit hour, to a maximum of \$7.00.

The full tuition for each student is due at registration time. There is no system of deferred payments. Students must complete their registration by paying their tuition in full on the day they register.

Student loans are available through the Financial Aids Office, but application for such loans must be made well in advance of registration.

TUITION REFUNDS

Withdrawal From College. After tuition has been paid and classes have begun, the following schedule will be used to determine tuition refunds. In the Fall and Winter semesters, if a student withdraws during the:

First Week	80%
Second Week	60%
Third Week	40%
Fourth Week	20%

No refund will be made after the fourth week.

Withdrawal refunds for the Spring Semester will be made as follows if withdrawal occurs during the:

First Week	80%
Second Week	40%

No refund will be made after the second week.

Dropped Classes. After Tuition has been paid and classes have begun, refunds for dropped classes (partial reduction of class load) will be made as follows:

First Week	100%
NO refund for dropped classes after the first week.	

The tuition refund policy for withdrawal from college and dropped classes applied to full-time, part-time, and evening students.

Residence Qualifications. In order to qualify as a resident of the Delta College District for tuition purposes, a student must be a bona fide resident of either Bay, Midland, or Saginaw County.

Refund Policy for Eligible Persons Authorized by the Veterans' Administration. As part of the Veteran's Administration regulation for training veterans under Public Law 634, Delta College has and maintains a policy for the refund of the unused portion of tuition, fees, and other charges in the event the eligible person fails to enter the course or withdraws or is discontinued. This policy provides that the amount charged to the eligible person for tuition, fees and other charges for a portion of the course shall not exceed the approximate pro rata portion of the total charges for tuition, fees, and other charges that the length of the completed portion of the course bears to its total length.



The Three-Semester Plan. The three-semester plan was adopted by the Delta College Board of Trustees as a means of developing year-round operation of the College. The plan makes possible fuller utilization of facilities, gives students more flexibility in long-range course planning, and enables students to complete their academic programs in a shorter period of time.

The Fall, Winter and Spring semesters are each composed of fifteen weeks, and each covers a full semester's work. The Spring semester beginning in April is a split-semester divided into two separate parts, each seven and one-half weeks in length as well as running for fifteen weeks. This multi-semester meets the needs and desires of a great number of students.

Freshman courses for high school graduates who wish to begin college prior to enrollment in the Fall semester are offered in the second half of the Spring semester. Selected courses for various curriculum will be offered as justified by demand.

The two-year academic program offered by Delta College can be completed in one and one-third calendar years. Specifically, a freshman entering in September of one year can complete four semesters by the end of December in the next calendar year; by entering in January he can finish two academic years by April of the following year; and by entering in April he can finish two academic years by August of the following year. However, students are not required to follow so concentrated a program, and course offerings are arranged to meet varying semester attendance patterns.

Class Attendance

1. Attendance is expected at all classes. There is no system of cuts.
2. Courtesy demands that students explain the reasons for their absences to their instructors.
3. It is the responsibility of the student to make definite arrangements for all work before going on field trips or other college sponsored events. If proper credentials for such activities are presented and arrangements made for the work before the event, then the absence should not be reported, but should be recorded in the instructor's records as explained.
4. Except in cases involving field trips or school activities which involve group absences no instructor will require statements from students concerning absences.

Grades and Grade Points. The following grading system will be used in college credit courses:

- A — Excellent
- B — Good
- C — Fair
- D — Poor
- E — Failed
- I — Incomplete
- W — Withdrawn
- X — Audit

The grade point system will be as follows: For each hour of credit of

A	— 4 grade points
B	— 3 grade points
C	— 2 grade points
D	— 1 grade points
E	— no grade points

In calculation of the overall grade point average, the number of E hours must be included, although no grade points are allowed.

An "I" (incomplete) grade is granted by special arrangement with the student's instructor. A final grade will be assigned by the instructor at the expiration date of the incomplete deadline.

Grade Reports. A grade report is sent to the student at mid-semester and at the completion of the semester. Grade reports are not mailed to students who have delinquent accounts at the college.

Repeat Courses. The highest grade (A,B,C,D, or E) received by a student for any given course shall be the grade used in his cumulative grade point average of all college work taken by the student. All other grades shall remain in his transcript and will be designated by the Registrar's Office so people will know they are not being counted.

Audit: A student may enroll in credit courses as an auditor with audit credit earned for the course. A mark of "X" will be recorded on his permanent record if general requirements of auditing are fulfilled. These are:

1. The student must have a student number (Be matriculated.)
2. Fees for the course are the same as credit classification.
3. Course objectives must be fulfilled, other than quizzes or examinations. These may be taken with the approval of the instructor.
4. Once a course is started on an audit basis a student may, with the approval of the instructor, change to credit within eight weeks of the beginning of the semester. Procedures should be carried out through the Registrar's Office.

Academic Standing. Any student deficient more than five honor points but less than sixteen honor points will be placed on probation. Incoming transfer students who are on probation must maintain a 2.0 average or they will be subject to dismissal review. In no instance will a student be awarded an associate degree with less than a 2.0 (C) cumulative grade point average in a Delta College Associate Degree curriculum.

Any student who is deficient more than fifteen honor points will automatically have his academic record reviewed by the Committee on Academic Standing. The Committee will decide whether the student is permitted to enroll the following semester.

Right of Petition for Re-Admission. A student who is dismissed for academic deficiency may immediately submit a written petition for reconsideration to the Committee on Academic Standing if he feels that his failure to achieve satisfactory academic performance was caused by unusual personal circumstances. A student who has been dismissed must remain out of school for at least two full semesters after disqualification unless re-admitted by the Committee on Academic Standing.

Withdrawal from College. To withdraw from College, the student must secure a withdrawal form from the Registrar's Office and process it according to directions.

Classification of Students. Students who have earned fewer than 24 semester hours are classified as Freshmen. Those who have earned 24 or more semester hours are classified as Sophomores. Students enrolled for 12 or more semester hours of course work (including physical education) will be classified as full-time students. Students enrolled for fewer than 12 semester hours will be classified as part-time students.

Changes in Program of Studies after Registration. Students are expected to complete the courses in which they register. If a change is necessary, students must file an approved drop or add card at the Registrar's Office. The student's decision to discontinue a course must be properly approved in the Student Services Office and is not officially recorded until a drop and add card has been completed, and is on file. The date this form is approved by the Registrar's Office is the date used to determine eligibility for a tuition refund.

Changing Major (Curriculum). A student planning to change majors should do so through counseling and official change form is completed and the change recorded on the student's transcript.

Added Courses. In general, no course may be added after the first week of the regular semester, or after the third day of a split third semester. (See Registrar's Office for procedure)

Dropped Courses. For courses officially dropped in the first week of a regular semester or within the first three days of a split third semester, no grade will be reported or recorded. If the course is dropped between the second week and the tenth week a student will receive a W grade. After the 10th week through the 15th week the grade will be an E, or W grade (if warranted) at the discretion of the instructor and providing proper withdrawal procedures are completed.

Final Examinations. Final examinations are required in all courses except physical education. Final examinations in physical education courses will be given during the last week of the semester prior to the examination days in academic subjects. No student will be excused from taking a final examination.

Before the end of each semester a schedule of final examinations will be announced.

Academic Record. A permanent record of a student's grades is maintained in the Office of the Registrar. Upon the request of a student, a transcript of the student's record at Delta College will be sent directly to any college, university, or prospective employer designated by the student. No charge is made for the first transcript; a one dollar charge is made for each subsequent transcript.

Recommendation for Transfer. If in addition to a transcript, a student needs a recommendation to the receiving institution, he should present his application to a counselor in the Student Services Office. The recommendation from Delta College will be based on the total information concerning the individual student and not on academic achievement alone. Transfer rules vary with each institution, and for specific information on the requirements for transfer, the student should refer to the Programs of Study section in this bulletin, to the catalog of the college or university which he expects to enter, to his adviser, or the Student Services Office.

Advanced Credit by Examination. Delta College permits students who have gained proficiency in certain areas of knowledge through previous training, experience, or individual study to secure credit by achieving satisfactory scores on examinations in lieu of class work.

There are two major categories to be considered for credit by examination. These are: credits granted for **external examinations** (Advanced Placement and/or College Level Examination Program) where previous evaluation has been made by college personnel and **internal examinations** where established by disciplines, that require college personnel services to develop and evaluate them.

Students may secure further information about either of these types of examinations from the Delta College Registrar or Director of Admissions.

Delta College reserves the right to modify curricula, policy, tuition, and class offerings at any time.

ASSOCIATE DEGREES OR CERTIFICATES

One of the following will be awarded to a student who completes the requirements:

- Associate in Arts Degree
- Associate in Science Degree
- Associate in Applied Science Degree
- Associate in Business Studies Degree

One or Two Year Certificates in Occupational Programs

Graduation Requirements. The Associate Degree requirements listed below are effective with the class entering Delta College in the Fall of 1965 and thereafter until such time as the Board of Trustees and the faculty change the

requirements. Students who enter Delta College prior to the Fall of 1965 will be permitted to graduate under degree titles in effect prior to that time. Associate Degrees are granted only upon recommendation of the faculty and the Board of Trustees.

Requirements for the Associate Degrees

General Requirements

Candidates for the Associate Degree must meet the following requirements:

1. Earn a minimum of 24 semester hours of credit at Delta College. The student must be enrolled at Delta while earning the final credits to complete this requirement.
2. Earn a minimum of 60 semester hours, exclusive of Physical Education.
3. Earn a 2.0 (C) cumulative grade point average in a specific curriculum.
4. Earn a minimum of three semester hours in Political Science as required in Act 106, Public Acts of 1954, State of Michigan.
5. Earn two semester hours in Physical Education courses (unless officially exempted).
6. File an application for an Associate Degree during registration for the final semester.

Exemptions: (Physical Education)

1. A veteran — defined as having at least one year of continuous active duty.
2. A student who is physically unable to participate (while at Delta College) as certified by a licensed physician.
3. Any other exemption approved by the Division Chairman.

For the Associate in Arts Degree:

1. The general requirements listed above.
2. Satisfactory completion of 6 semester hours in English Composition or the equivalent.
3. Group requirements in all three groups must be fulfilled.

I Humanities.....	6-8 credit hours
II Social Science.....	6-8 credit hours
III Science.....	6-8 credit hours

The requirements in all three groups must be fulfilled.

For the Associate in Science Degree:

1. The general requirements listed above.
2. Satisfactory completion of 6 semester hours in English Composition or the equivalent.
3. Group requirements

I Humanities.....	6-8 credit hours
II Social Science.....	6-8 credit hours
III Science.....	20-24 credit hours

Either the Humanities requirements or the Social Science requirements, but not both, must be fulfilled. The Science requirement must also be fulfilled.

For the Associate in Applied Science Degree:

1. The general requirements listed above.
2. Satisfactory completion of 6 semesters hours in English Composition or the equivalent.
3. Satisfactory completion of one of the technical curricula or the Nursing Curriculum, Law Enforcement, Radiologic Technology, Dental Assistant.

For the Associate in Business Studies Degree:

1. The general requirements listed above.
2. Satisfactory completion of 6 semester hours in English Composition or in Business Communications.
3. Satisfactory completion of a business curriculum.

Definition of Group Requirements

Group I Humanities:

American Literature, English Literature, Art Appreciation, Drama, Music Appreciation, Languages (French, Spanish, German, Russian), Philosophy, Speech, History 111 and History 112†

Group II Social Science:

Economics, Geography*, History, Political Science, Psychology*, Sociology, History 111 and History 112†

Group III Science:

Biology, Chemistry, Geography* and Geology, Mathematics, Physics, Physiology, Psychology*

* Geography and Psychology may be included in either Group II or Group III but may not be counted in both groups.

†History 111 and History 112 may be included in either Group I or Group II but may not be counted in both groups.

Certificate Requirements: Satisfactory completion of a certificate curriculum.

Graduation Honors. A student is graduated with highest honors if he has completed his curriculum with a cumulative grade point average of 3.8 or higher.

He is graduated with high honors if he has completed his curriculum with a 3.50-3.79 cumulative grade point average.

Honors graduates are those with a 3.2-3.49 cumulative grade point average. Transfer students are eligible for graduation honors if they have completed the last 24 credit hours at Delta College.

Honors. Each semester a Dean's List containing the names of all students who have current grade point average of 3.5 or higher in 12 hours of work during a Fall or Winter Semester or 6 hours, during a Spring or a Summer Semester will be issued.

Student Responsibility for Catalog Information. Students are held individually responsible for the information contained in the catalog. Failure to read and comply with college regulations will not exempt a student from such personal responsibility.



STUDENT SERVICES

The office of the Dean of Students provides services which contribute to the social, cultural, and physical growth of the student, as well as aiding him with his academic program. These services include counseling, pre-enrollment advising, registration, housing, health services, orientation, testing, college and high school orientation, academic advising, educational and career information, financial aids, placement, and college activities.

Education, Career, and Personal Counseling. Professionally trained counselors are available in the Student Services Office to give assistance in educational, career, and financial planning as well as problems of a personal nature. The first contact with a counselor is previous to a student's first enrollment. At that time, his career and educational plans are discussed briefly and his choice of courses made. After enrollment, his counselor is available as often as necessary to help him in learning about his aptitudes and interests, to further develop his vocational plans, to aid in increasing self-understanding, and to assist in personal problems. This is usually done by individual interview, but sometimes group sessions are also helpful in many of these areas.

Resource materials, such as college catalogs and vocational literature, are available in the counseling office and in the College library.

Testing. At this time, Delta does not require testing for admission or placement. A limited number of achievement tests are available in areas of mathematics, reading, and English, and are given on specified dates under the general testing of Delta Battery. This battery is helpful for counseling and placement purposes and dates on which it is given can be obtained from the Testing office.

Tests which aid in determining academic and career interests can also be taken in the Testing office.

Delta College is a testing center for the American College Testing Program. (ACT)

Students can receive interpretation of all tests given from their counselors.

The General Educational Development Test (G.E.D.) is administered through the Student Services Office by individual appointment and at a nominal fee. This test is designed for persons who have not received a high school diploma and who seek certain programs of study, or employment, particularly civil service positions.

Orientation Services. For Freshmen, an orientation program is conducted during the summer and early in each semester as a means of introducing new students to college life and academic study. Through this program students are acquainted with the facilities of the college and introduced to academic and non-academic activities. College standards and policies are discussed in an orientation assembly and students are encouraged to participate in all phases of college activities.

As a means of orientation to academic study beyond Delta College, a liaison with the four-year state institutions is maintained in order to provide students with the necessary information to prepare for transfer to a baccalaureate degree program. In the sophomore year, interviews with senior college representatives for assistance in application for transfer are scheduled.

Registration. Registration procedures for Fall, Winter, and Spring-Summer Semester are described in the Class Schedule Catalog each semester. Information can also be secured from Student Services or the Registrar's Office.

Health Services. Delta College maintains a health center which is equipped to provide emergency treatment and check minor health problems. A registered nurse is on duty from 8:00 a.m. to 10:00 p.m. on school days, from 8:00 to 12:00 a.m. on Saturdays. Health and accident insurance is available at a low rate. All international and out-of-state students are required to have health insurance.

Student Housing. The college operates two residence halls for full-time credit students; North Hall for men and South Hall for women. Each Hall houses 80 students in 40 double rooms. Charges include room and board, and meals are taken in the College Commons.

In addition to Delta on-campus housing, Andersen Hall operated by Saginaw General Hospital in Saginaw is available to Delta female students. Nursing students have preference in placement at Andersen Hall. Room cost at Andersen does not include meals. Students living in Andersen Hall may purchase their meals on a cash basis in the hospital and college cafeterias.

Applications for residency in the campus dormitories or Andersen Hall may be obtained from the Housing Office. Students requiring assistance in finding private housing should also contact the Housing Office.

FINANCIAL AIDS

Financial Aids. Financial assistance awarded by the College is based on academic ability, financial needs, guidelines set up by organizations and directions given by the government when applicable. In the determination of financial aid it is expected that the student, together with his parents, will contribute as much as possible to the cost of attending college.

Any student is eligible to apply for financial aid who is a citizen or national of the United States or has such immigration status and personal plans to justify the conclusion that he intends to become a permanent resident of the United States. In accordance with Title VI of the Civil Rights Act of 1964 "No person shall, on the grounds of race, color or national origin be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal assistance."

To be eligible for financial assistance, the student should apply for admission, submit a request for Financial Assistance and provide the necessary evidence of financial need. The evidence of financial need is determined by submission of a Parents Confidential Statement to The College Scholarship Service. These forms are available through high school counselors as well as the Office of Financial Aid.

Five basic types of financial assistance are available to Delta College students. These are loans, college work study, grants, scholarships and on-campus employment.

Loan Funds. Delta College can assist students with loans from several different sources. Application for these loans must be made well in advance of registration.

Funds are available under the National Defense Student Loan Fund. This fund has features which make it exceptionally valuable to students who qualify. The interest rate is low and payments in most cases do not begin until a student's college work is completed. In addition there is a feature providing forgiveness of a portion of the loan for students who enter the teaching profession.

A student Nursing loan is available to full-time students in the nursing curriculum who exhibit financial need. This loan, too, has a forgiveness feature. Similarly, the Law Enforcement Loan is awarded to qualifying students and has a forgiveness clause.

It is possible for students to obtain personal loans for college expenses from local banks, credit unions and savings and loan associations on limited security by applying through the Michigan Higher Education Assistance Authority.

Delta College also has a short term emergency student loan fund. This fund is supported by contributions received from many individuals and agencies within the Delta College district.

College Work Study. Students who qualify under The Federal Work Study Program may be assigned employment on campus or at participating agencies off campus.

Grants. Grants are available under The Federal Educational Opportunity Grant program for those students who show exceptional financial need. They must be matched by funds from other financial aid programs administered by Delta College.

Law Enforcement grants are available to full-time officers who are employed by a recognized agency approved by the Justice Department.

Scholarships. Nursing scholarships are available to students who show an extreme need for financial assistance and are enrolled full time in the Nursing curriculum leading to an Associate Degree in Nursing.

Funds available to Delta College students in the form of scholarships have been provided through the generosity of interested individuals, firms and organizations. Potential recipients will be selected from among those students who have completed the application procedure for requesting financial aid, have a proven need and meet any special requirements for specific scholarships. Among these scholarships which have been made available to Delta College students are the following:

Alvin Bentley Foundation
American Association of University Women
American Institute of Architects, Saginaw Valley Chapter
Bay City Lions Club
Bay City Panhellenic
Business Studies Scholarship
Leonard Bergstein Memorial
Gilbert Currie Estate
Delta Women's Club
Frances Goll Mills
Fred Dulmage Endowment
Mr. & Mrs. James Gerity, Jr. Broadcasting Trust Agreement
The Hellenic Women's Society of Saginaw
Junior League of Saginaw, Michigan, Inc.
Lakehead Pipeline Scholarship
M. Seth Babcock Endowment
Michigan Farm and Garden Foundation
Michigan Home Builders Association
Saginaw Home Builders Women's Auxiliary
Midland Panhellenic
Pioneer Club Scholarship
Saginaw Insurance Agents

Saginaw Junior Reading Club
Saginaw Osteopathic Hospital
Saginaw Osteopathic Hospital Auxiliary
Tri-County Center for the Deaf and Aphasic
United Church of Christ
United Migrants for Opportunity, Inc.
Zonta Club

Board of Trustees Full Tuition Scholarship is granted to one graduating senior from each of the public and parochial high schools in the Delta College district. These awards are made on the basis of high scholastic achievement and selection is made from the nominations by high school principal. These scholarships provide full tuition for as many consecutive semesters as the student maintains a prescribed standard of scholastic achievement, to a maximum of four semesters.

On Campus Part-time Employment. The Financial Aids Office will assist all students who are seeking on campus part-time employment.

Additional information regarding application procedure or qualification for any of the above programs may be obtained by contacting the Delta College Financial Aids Office.

Veterans Benefits. Students who desire assistance in making application for veterans benefits, either for G.I. Bill benefits or benefits awarded to children of veterans, are requested to contact the Registrar's Office. All forms are available for these purposes in their office.

Social Security. Social Security claims are processed by the Registrar's Office. Students must be enrolled full-time in order to qualify for these benefits. Information is available in the Registrar's Office.

Selective Service. The Registrars Office is responsible for notifying the various Selective Service Boards concerning the status of their students. Information on Selective Service may be obtained from the Registrar's Office.

PLACEMENT SERVICES

Full-time Employment. The Placement Office assists graduating sophomores, alumni, students completing certificate programs, and all other students

seeking full-time positions. Students may register with the office, and there is no charge for this service.

While placement in suitable positions cannot be guaranteed to students and alumni, every effort will be made to give the student as much assistance as possible. During the winter semester, many industrial and business employers send representatives to the campus to interview students. Interviews are then arranged for interested students.

Part-time Employment. The Placement Office serves as a clearing house for local businesses and industries seeking part-time help. As soon as a part-time job is received by the office, it is posted on the "Job Market" bulletin board outside the office. Students can then obtain the necessary information from the board to contact the employer for an interview.

Work Related Program. Many curricula offer opportunities for students to accept jobs directly related to their field of study. Jobs of this nature may be arranged on either a half-day basis or on an alternating semester basis. Application may be made through the Placement Office. Business students interested in cooperative education should contact one of the Business Division Cooperative Education Coordinators.

OTHER FACILITIES

Book Store. A modern well-equipped book store, located on the court level adjacent to the Commons, serves students, faculty, and other interested individuals. This facility is open daily.

The Commons. Food services, lounge facilities, and meeting rooms are provided in the Commons area which is located on the court level at the north end of the building.

Bus Transportation. Bus transportation from Bay City, Saginaw and Midland, and return is provided by a private operator. This service allows the student to arrive early each day in time for class and return home at the close of classes.

Parking. Ample parking facilities adjacent to the College building are provided for students, faculty and guests. Regulations and car registrations for parking are provided by the Business Office and explained in detail in the Student Handbook.

STUDENT ACTIVITIES

Philosophy. Delta College as an institution of higher education has a commitment to assist its students to develop in body, mind and spirit. Recognizing a need for a complete and fulfilling educational program, the College has included in addition to its full academic offerings a complete co-curricular activity program. In establishing such a program the College offers students the opportunity to participate as active leaders in the college community.

Co-curricular activities is in allegiance with the educational program of the College; for student activities is a "laboratory" of "creativity". It is designed to assist young adults in developing their talents in group leadership, music, theatre and/or writing, as well as giving them a sense of total social enjoyment and responsibility.

Through the activities program, students are given a chance to better understand themselves, their fellow students, the faculty and the administration. Delta College has encouraged a variety of student organizations, professional associations and many interest groups, whereby students may be able to develop their talents and interests of their own choosing.

The Student Center was built for the specific purpose of creating an area for the student's enjoyment and relaxation. All students are welcomed and encouraged to utilize the Student Center facilities. Student Government is housed in this facility.

Student Government. The student governing body at Delta College is the Student-Administrative-Coalition. It derives its authority and responsibility from the Student-Administrative-Coalition Constitution. The basic philosophy of the College is the belief that students must share with the administration and faculty the responsibility for their own total development. To this end they should have opportunities to participate in a variety of activities and should have responsibility for initiation and control of these activities. Several organizations and committees are provided to fulfill this control and to implement the activities program, under the governing of the Student-Administrative-Coalition.

The Student-Administrative Coalition is composed of four executive officers, eight representatives from the sophomore class, ten freshman representatives and club representatives. The executive officers — President, Vice-President, Secretary, and Treasurer — are elected by a vote of all students during the Spring Semester. Freshman representatives are elected during the first month of the Fall Semester. All executive officers and representatives have one vote. A parliamentarian is chosen from S.A.C. members at large.

The Student-Administration-Coalition is composed of the following five boards: Activities, Judicial, Public Relations, Publications, and Finance.

The chairman of the respective boards are appointed from the freshmen and sophomore representatives at large by the President of the S.A.C. Exceptions to this are the appointments of the Activities and Finance Board Chairmen. The appointments are given to the Vice-President and Treasurer of the S.A.C., respectively.

Student Interest Groups. At Delta there are a variety of activities on campus reflecting the diversity of student interest. Delta students are encouraged to form groups which have common interest or hobbies. Recognition of such clubs may be gained by securing the proper application from the Office of Student Activities and petitioning the Student-Administrative-Coalition for recognition and funding. Faculty advisors are designated as sponsors upon request of the club. Such groups participate in the areas of art, music, political and international affairs, departmental or professional subject groups. Additional information about any of these organizations and others may be obtained from the Director of Student Activities or his assistant. At this time there are 25 clubs or student interest groups functioning and approved.

Student Conduct. Students are expected to set and observe a proper standard of conduct. Failure to show respect for order, morality, personal honor and academic duty demanded of a good college citizen shall be deemed sufficient cause for dismissal from the college.

STUDENT PUBLICATIONS

Delta College has three student publications: the yearbook, *Gnosis*; the student literary magazine, *Dialogue*; and the newspaper, *Collegiate*.

Gnosis. Preparing the yearbook is the job of a group of dedicated students. They receive no pay but they seem to derive satisfaction from doing their job well. Aside from the restrictions inherent in a yearbook — that it be a record and a history — the editors have a free hand. They select cover and content, color and design, type and stock.

Dialogue. Delta's literary magazine is presently published once a year, but last year's student interest indicates that publication should be increased to once a semester. Contributions of writing, drawing, and photography, come from the student body at large. An editorial board and an art board selects the material to be used from these works.

Collegiate: The *Collegiate*, official bi-weekly student newspaper, is entirely student produced. It is supported by an allocation from the Finance Board of the Student-Administrative-Coalition and by some advertising revenue.

All of Delta's student publications serve as laboratories for student development and student-directed activity. They reflect the co-curricular activity and philosophy in giving students an opportunity to put into practice outside of class what they may have developed in class. Delta students are encouraged and cordially invited to take part in the production of one or all of the student publications.

OTHER ACTIVITIES

Intercollegiate Athletics. Delta College is a member of the Michigan Junior College Athletic Conference and the National J.C. Athletic Association. We offer seven intercollegiate sports for men including Soccer, Cross Country, Basketball, Wrestling, Tennis, Track and Golf. Delta is one of the few junior colleges in Michigan offering an Intercollegiate program for women. The women's program includes Field Hockey, Volleyball and Basketball.

Intramural Program. The Division of Health, Physical Education and Recreation offers a diversified program of Intramural and Women's recreational Activities for the Delta students. Students interested in the program should contact the Division of the activities offered.

Sororities and Fraternities. As of April 1967, Delta College officially recognized four sororities and four fraternities. These groups are governed by the Inter-Sorority Council and Inter-Fraternity Council. All Greek societies are local and have no national affiliation. Each organization encourages high scholarship and active participation in school activities.

Social and Cultural Events. Delta College has several outstanding musical groups, including the choir, the Delta College Singers (selected from the choir), and the Wind Ensemble group. Too, there is the theatrical group known as the Delta Players. They have presented such plays as "Harvey", and "Raisin in the Sun", "Diary of Anne Frank", "Who's Afraid of Virginia Wolf", "The Tempest".

Also, Delta College students attend many of the Tri-city community cultural programs. The student Convocation Board has made it possible for Delta Students to attend such programs free of charge. The Board is able to do this, by purchasing blocks of season tickets, at a discount rate, each year. Listed below are the names of the organizations supported by the Convocations Board:

Bay City Community Concerts
Bay City Players
Midland Little Theater
Midland Music Foundation
Midland Symphony Orchestra
Saginaw Community Concerts
Saginaw Pit and Balcony
Saginaw Symphony Orchestra



BOARD OF EDUCATION

TRANSFER PROGRAMS

Group Requirements of Selected State Colleges and Universities. A variety of curricula, or programs of study, are available to Delta College students. Generally, these curricula are two years (four semesters) in length and culminate in the awarding of the associate degree; however, a few are less than two years and some of the health careers and technician programs are five and six semesters in length.

Transfer curricula provide the first two years of study needed to fulfill requirements of senior colleges and universities awarding the baccalaureate degree. Delta College maintains up-to-date information and continuous liaison with the senior colleges in Michigan regarding the requirements for transfer. Curricula sheets for the state colleges and universities are maintained in the Student Services Office and may be obtained at any time. A file of both state and out-of-state catalogs is also available. Students are advised to use both the curricula sheets and the catalogs in determining their course schedules. Counselors also are available to advise students on transfer problems.

Programs designed for transfer to Baccalaureate Degree Granting Institutions.

ARCHITECTURE and DESIGN

- 4 Architecture and Design
- 5 Landscape Architecture

BUSINESS

- 15 Business Administration
- 22 Hotel Management

EDUCATION

- 44 Art
- 45 Business
- 46 Elementary
- 50 Industrial Arts
- 52 Music
- 51 Physical Education
- 48 Secondary
- 49 Special

ENGINEERING

- 55 General Engineering

LIBERAL ARTS

- 90 Academic (General) 61 Pre-Journalism
- 9 Art 62 Pre-Law
- 64 Library Science 88 Social Work

Basic Requirements. The following is a listing of the basic requirements for most of the public senior colleges in Michigan. There may be variations from these requirements for specific curricula, and each student will be expected to obtain additional information as a guide-line in planning his program.

MEDICAL AND HEALTH FIELDS

- 71 Dental Hygiene
- 74 Medical Technology
- 76 Mortuary Science
- 77 Pre-Nursing
- 70 Pre-Dentistry
- 80 Occupational Therapy
- 73 Pre-Medicine
- 81 Pre-Optometry
- 82 Pre-Pharmacy
- 86 Pre-Veterinary
- 83 Physical Therapy
- 84 Public Health

NATURAL RESOURCES

- 1 Agriculture
- 40 Conservation
- 58 Forestry
- 68 Chemistry

CENTRAL MICHIGAN UNIVERSITY

The following are group classifications used at Central Michigan University and courses at Delta College which may be used to fill these requirements:

Group I — English, Languages, and Speech 12 Sem Hrs
English 111, Speech 112, and additional courses from Language, Literature or Speech.

Group II — Science 12-18 Sem Hrs
Divided among at least two departments. Biology, Geology, Mathematics, Physical Science, Physics, Chemistry, and in some curricula, Psychology.

Group III — Social Science 12 Sem Hrs
Divided among at least two departments. Economics, Geography, History, Philosophy, Sociology. Political Science is required.

Group IV — Physical Education 4 Sem Hrs

FERRIS STATE COLLEGE

Group Requirements for a baccalaureate degree include the following:

Freshman English	6 Sem Hrs
Science	8 Sem Hrs
Social Science	6-12 Sem Hrs
Humanities	6-8 Sem Hrs

MICHIGAN TECHNOLOGICAL UNIVERSITY

Core Requirements for Engineering:

Mathematics	16 Sem Hrs
Chemistry	8 Sem Hrs
Physics	8 Sem Hrs
Engineering Science	3 Sem Hrs
General Studies	10 Sem Hrs
Humanities and Social Studies	15-30 Sem Hrs

Requirements vary among the engineering majors.
See catalog for core requirements for other curricula.

NORTHERN MICHIGAN UNIVERSITY

Course Requirements

Group I — Humanities 16 Sem Hrs
English, Speech, Art Appreciation, Music Appreciation, Philosophy, Religion, History of Western Civilization.

Group II — Mathematics and Natural Science 8 Sem Hrs
At least one laboratory science course in Chemistry, Physics, or Biology, plus additional hours in any of these areas of Mathematics. Students with less than 8 hours may take Common Learning 121 or additional courses in the specific areas named.

Group III — Social Science 8 Sem Hrs
American Government and additional courses in Sociology, Economics, Geography, or Political Science.

Group IV — Foreign Language or Electives 8 Sem Hrs

SAGINAW VALLEY COLLEGE

The basic requirements for a degree program at Saginaw Valley College may be met as follows:

Group I – Communication Area	9 Sem Hrs
English 111, 112	
Speech 112	
Group II – Humanities	8 Sem Hrs
Literature, Philosophy, Art Appreciation, Music Appreciation, Foreign Language	
Group III – Science Area	8 Sem Hrs
Biology, Physical Science, Geology, Chemistry, Physics, (any two or a sequence of one science)	
Group IV – Social Science	8 Sem Hrs
History, Political Science, Sociology, Geography, Economics 221, 222	
Group V – Physical Education	NONE
Electives – majors or minors (number depends upon curriculum).	

EASTERN MICHIGAN UNIVERSITY

Group requirements for a degree and the equivalent courses at Delta are:

Group I – Language and Literature	14 Sem Hrs
English 111, 112, Speech 112, Literature and Language.	
Group II – Science	12 Sem Hrs
Biological Sciences, Physical Science, Geography 111, Mathematics, Psychology 211.	
Group III – Social Science	12 Sem Hrs
History, Political Science, Philosophy, Economics, Sociology, Geography.	
Group IV – Fine Arts – for some curricula	
Art, Music.	
Group V – Physical Education	4 Sem Hrs

MICHIGAN STATE UNIVERSITY

All degree students must complete four foundation courses. The Michigan State University and the Delta College equivalencies are listed below:

Group I – American Thought and Language	6 Sem Hrs
English 111, 112.	
Group II – Natural Science	8 Sem Hrs
Divided between the Biological Sciences and the Physical Sciences.	
Group III – Social Science	8 Sem Hrs
Divided among two or more subject matter departments.	
Economics	
Geography	
Political Science	
Psychology	
Sociology	
Group IV – Humanities	8 Sem Hrs
Divided among two or more departments.	
History	
Literature	
Music Appreciation, Art Appreciation	
Philosophy	

Group V – Physical Education	2 Sem Hrs
------------------------------	-----------

Many of the curricula demand a year of college credit in a foreign language if an equivalent amount of high school language was not taken.

Note: Group requirements started at Delta should be completed prior to transfer.

UNIVERSITY OF MICHIGAN

Students planning to enroll in the College of Literature, Science, and the Arts at the University of Michigan should complete as many as possible of the distribution courses listed below during their first two years.

Group I – English	6 Sem Hrs
English 111, 112	
Group II – Foreign Language	0 to 16 Sem Hrs
Fourth semester proficiency in one language.	
Group III – Social Sciences	14 Sem Hrs
Work in at least two departments including a two-semester sequence in one department. Not more than 8 semester hours in one department.	
Economics, Geography, History, Political Science, Psychology, Sociology.	
Group IV – Natural Science	12 Sem Hrs
Work in two departments including a two-semester sequence in a laboratory course in one group.	
I. Biological, Geological, and other Sciences.	
II. Chemistry and Physics.	
Group V – Humanities	12 Sem Hrs
A two-semester sequence in one group and one semester in another.	
I. Literature	
II. Fine Arts	
III. Philosophy.	

A minimum of 40 hours of these requirements, including English and the language, must be completed during the Freshman and Sophomore years.

Note: The School of Education has a few variations in distribution requirements. The appropriate catalog should be consulted by education majors.

WAYNE STATE UNIVERSITY

The basic curriculum of the College of Liberal Arts and the Delta courses to fulfill these requirements are shown below. A student should check for specialized curricula as they vary from the general curriculum listed.

Group I – English and Literature	12 Sem Hrs
English 111, 112, and Literature electives.	
Group II – Foreign Language	0 to 20 Sem Hrs
Number of credits dependent upon high school language units.	
Group III – Natural Science	16 Sem Hrs
The laboratory science chosen may be determined somewhat according to the requirements of the major field. Must include one year's sequence in one science.	
Group IV – Social Science	12 Sem Hrs
Group V – Electives	18 Sem Hrs

WESTERN MICHIGAN UNIVERSITY

The basic requirements for a degree program at Western Michigan University may be met as follows:

Group I – Communication Area	6 Sem Hrs
English 111, 112	
Group II – Science Area	8 Sem Hrs
Must be divided between two or more departments: Biological Science and a Physical Science.	
Group III – Social Science Area	4 Sem Hrs
Must be divided between two or more departments: History, Economics, Sociology, Political Science.	
Group IV – Humanities Area	8 Sem Hrs
Must be divided between two departments or more. West Civilization, Literature, Philosophy, Art Appreciation or Music Appreciation.	
Group V – Physical Education	4 Sem Hrs
Note: Group requirements started at Delta should be completed before transferring.	

GENERAL REQUIREMENTS

General requirements for certain curricula are listed in the following paragraphs. These requirements vary for different senior colleges and departmental majors. Students should obtain curriculum sheets for the program in which they are enrolling. Each student should follow the program for the senior college to which he plans to transfer. An example of some of these curricula sheets are shown for these five:

Business Administration
Elementary Education
Secondary Education
Engineering
Liberal Arts

Curriculum sheets are available for the following transfer programs: Architecture and Design, Landscape Architecture, Hotel Management, Art, Business, Industrial Arts, Music, Physical Education, Special Education, General Engineering, General Academic, Library Science, Pre-Journalism, Pre-Law, Social Work, Dental Hygiene, Medical Technology, Mortuary Science, Pre-Nursing, Pre-Dentistry, Occupational Therapy, Pre-Medicine, Pre-Optometry, Pre-Pharmacy, Pre-Veterinary, Physical Therapy, Public Health, Agricultural, Conservation, Forestry and Chemistry.

BUSINESS ADMINISTRATION TRANSFER PROGRAMS

Business Administration students prepare for business, industrial, and community leadership. Professional goals in business may be directed toward specialized areas: accounting, retailing, finance, marketing, insurance, real estate, secretarial administration, and public administration. The two-year sequence of courses provides general background principles of business, and some of the tool subjects. A transfer student may follow various programs of specialization. The student is urged to secure the catalogue of the senior college of his choice and plan his courses carefully in conference with his adviser.

BUSINESS ADMINISTRATION

English 111, 112	6 Sem Hrs
Accounting 211, 212	8 Sem Hrs
Economics 221, 222	8 Sem Hrs
Science	4-8 Sem Hrs
Mathematics	3-8 Sem Hrs
Social Science	4-8 Sem Hrs
Humanities	0-9 Sem Hrs

ELEMENTARY EDUCATION

English 111, 112	6 Sem Hrs
Speech 112	3 Sem Hrs
English 251	3 Sem Hrs
Language	0-16 Sem Hrs
Social Science	8-15 Sem Hrs
Science	8-16 Sem Hrs
Humanities	0-12 Sem Hrs
Art Education	3-6 Sem Hrs
Music	3-6 Sem Hrs
Mathematics 110	3 Sem Hrs
Physical Education	2-4 Sem Hrs

Certain phases of Special Education for teaching the handicapped are obtained through this curriculum.

A special kind of opportunity exists on a cooperative basis between Delta College and Michigan State University through the Educational Intern Program in Elementary Education. All four years of training, with the exception of two summers on the MSU campus, can be completed at Delta or in the geographic area of the student's internship training. Additional information is available at the Student Services Office.

SECONDARY EDUCATION

English 111, 112	6 Sem Hrs
Speech 112	3 Sem Hrs
Literature*	3-12 Sem Hrs
Foreign Language	0-16 Sem Hrs
Science	8-12 Sem Hrs in two departments; at least one year of laboratory science is required.
Social Science	8-14 Sem Hrs
Humanities*	3-12 Sem Hrs
Physical Education	2-4 Sem Hrs

*Literature requirements usually included in Humanities group.

There are variations of this program for Business Education, Home Economics Education, Industrial Education, and some phases of teaching the handicapped.

ENGINEERING

English 111, 112	6 Sem Hrs
Chemistry	5-11 Sem Hrs
Physics 211, 212, 215	13 Sem Hrs
Mathematics 161, 162, 261, 262*	16 Sem Hrs
Economics 221, 222	8 Sem Hrs
Drafting 155, 156	6 Sem Hrs
Political Science	3 Sem Hrs
Humanities	3-8 Sem Hrs

*Placement in the beginning course of this sequence depends upon prior courses in mathematics and scores on placement tests.

LIBERAL ARTS – B.A. DEGREE

For students interested in preparing for Law, Social Work, Library Science, Linguistics, and similar fields.

English 111, 112	6 Sem Hrs
Speech 112	3 Sem Hrs
Language	8-16 Sem Hrs
Literature*	5-12 Sem Hrs
Social Science	12-16 Sem Hrs
Science	12-18 Sem Hrs
Humanities*	5-12 Sem Hrs
Physical Education	2-4 Sem Hrs

*Literature requirements usually included in Humanities group.

The minimum number of credits in some groups may be greater than listed above depending upon department major.

DATA PROCESSING

Delta College Suggested Courses For Transfer To Ferris State College**

First Semester	Sem Hrs
Data Proc 133 – Introduction to Data Processing	3
Acct 211 – Principles of Accounting	4
Math 122* – College Algebra	3
Eng 111 – Freshman Composition	3
HE 171 – Personal Health	3
PE – Elective – Activity	1
	17
Second Semester	
Data Proc 246 – PL/I Programming	3
Acct 212 – Principles of Accounting	4
Eng 112 – Freshman Composition	3
Lab Science or Math Elective	4
PE – Elective – Activity	1
	15
Third Semester	
Data Proc 235 – Data Processing Applications	3
Data Proc 245 – COBOL Programming	3
Gen Bus 251 – Business Law	3
Econ 221 – Principles of Economics	4
Literature or Speech	3
	16
Fourth Semester	
Data Proc 239 – Basic Assembler Language or Data Proc 243 Report Program Generator Programming	3
Gen Bus 252 – Business Law	3
Econ 222 – Principles of Economics	4
Lab Science	4
Pol Sci 103 – Introduction to American Government	3
	17

*Placement in mathematics courses depends upon previous mathematics background. If necessary, the student should elect the necessary courses to enable him to take Mathematics 122.

**Also fills all requirements for a major in Data Processing so that the student may receive an Associate in Business, Data Processing Major, from Delta College.

AGRICULTURAL CURRICULUM

Associate Degree Program. Suggested curriculum for students transferring to Michigan State University and other institutions:

First Semester	Sem Hrs
Eng 111 – Freshman Composition	3
Biol 111 – Principles of Biology	4
Chem 101 or Chem 111 – General Chemistry or General and Inorganic Chemistry	5,4
Math 131 – Introductory College Mathematics	5
PE – Elective – Activity	1
	18,17
Second Semester	
Eng 112 – Freshman Composition	3
Soil Sci (MSU 210) – Fundamentals of Soil Science	4
Chem 102 or Chem 112 – General Chemistry or General and Inorganic Chemistry	3,4
Pol Sci 111 – American Government and Politics	4
PE – Elective – Activity	1
	15,16
Third Semester	
Speech 112 – Principles of Public Speaking	3
Econ 221 – Principles of Economics	4
Sci Elective (3)	4
Crop Sci (MSU 251) – Plant and Animal Genetics	4
	15
Fourth Semester	
Agri Econ (MSU 240)	4
Psy 211 – General Psychology	4
Sci Elective (3)	4
Gen Bus 151 (4) – Business Communications	3
	15
(1) Choice depends on the agricultural major selected.	
(2) Mathematics requirements depend on the agricultural major selected: generally, College Algebra or its equivalent is sufficient; Agricultural Engineering requires Mathematics 161, etc. Students may have to complete mathematics requirements after transferring.	
(3) Supporting science depends on the agricultural major. Some choices are physics 111, 112, Mathematics 161, 162, Biology 111, 112.	
(4) General Business 151 recommended; English 113 may replace General Business 151. One of the following may replace General Business 151:	
An Sci (MSU 325) – Applied Animal Nutrition	
Biol 151 – Botany	
Chem 211 – Organic Chemistry	
Math 161 – Analytic Geometry and Calculus I	

If a student elects one of the four courses above instead of General Business 151 or English 113, he must then complete 3 additional hours of communications at Michigan State University.

Students must complete all of the humanities basic at Michigan State University.



CAREER PROGRAMS

Delta College offers the following Associate Degree curricula, which require four or more semesters to complete.

BUSINESS EDUCATION*

- 11 Accounting
- 14 Air Line Hostess
- 13 Air Line Hostess — Clerical
- 20 Management
- 18 Data Processing
- 25 Finance and Banking
- 35 Marketing
- 32 Medical Assistant
- 16 Real Estate
- 27 Retail Mid-Management**
- 29 Secretarial (General)
- 30 Chemical Secretarial
- 31 Legal Secretarial

HEALTH EDUCATION

- 72 Dental Assisting
- 78 Nursing (RN program)
- 79 Radiologic Technology

PUBLIC SERVICE

- 43 Broadcasting
- 53 Engineering Assistant
- 23 Law Enforcement
- 87 Social Health Services Assistant
- 02 Urban Professional Assistant

TRADE — TECHNICAL EDUCATION

- 3 Architectural Technology
- 97 Automotive Service Technology
- 92 Electronic Technology
- 54 Industrial Supervision
- 94 Instrumentation Technology
- 93 Mechanical Technology
- 59 Residential Construction Technology

* All curricula listed (except Air Line Hostess) under Business Education have co-operative opportunities with Business and Industry in the Saginaw Valley.

** Prior to entering this curriculum students must have the approval of the Distributive Education Coordinator.

The following certificate level curricula require from two to four semester to complete.

10 Accounting	6 Drafting & Design
98 Automotive Service (Mechanics)	24 Machine Calculation
99 Automotive Service Specialist	28 Secretarial

BUSINESS CAREER PROGRAMS

The Business Education Division is vocational in its aims and objectives. It provides the following educational opportunities:

- I. For an Associate Degree leading to a Baccalaureate Degree in
 - (a) Business Administration or Applied Science, for employment in such fields as accounting, advertising, banking, finance, hotel management, business law, marketing, personnel, real estate, secretarial, and transportation.
 - (b) Business Education in preparation for teaching office, general business, or distributive education courses; and with additional degrees, for teaching, coordinating, or administrative duties in colleges and universities.
- II. For Business Careers, with an Associate Degree in Business Studies. Business subjects and related courses in communications, mathematics, science, economics, history, government, and physical education, prepare the student for employment in business and commercial occupations. There are excellent positions open to community college graduates. Courses of study are planned in areas where job opportunities clearly exist. These offerings are modified from time to time as the needs of the communities change. Emphasis is placed on assisting the student in choosing a curriculum to meet vocational requirements, in accordance with his interest and aptitudes. Some suggestions are printed here for general information; however, each student plans, with his adviser, a sequence of studies to fit his individual needs.

Cooperative Occupational Education. This is a method by which a student may apply learned skills, principles, and concepts in the role of an actual paid on-the-job learning worker. The selected training station supervisor works with the student to help develop occupational competence in an occupational area that is directly related to the student's career goal and the curriculum that he or she has chosen. This learning experience of at least 15 hours per week in a real-life job and one hour per week in a co-op class is supervised by a state certified coordinator. Three credits per semester are earned by the co-op student for successfully meeting all requirements.

Students who are interested in cooperative education may make formal application in the cooperative education office.

In addition to these two regular groups, the Business Education Division welcomes those students who do not wish to complete degree requirements, who desire to take a single course, or a series of courses, in the Day or Evening College, to fulfill their particular requirements. Many students find themselves in circumstances that do not permit a full two-year program.

BUSINESS ONE-YEAR CURRICULA

These courses, designed especially for the student who plans to attend college for only one year, give the technical knowledge necessary for entry into the business field. Students completing this program have been placed in attractive positions. The following courses are recommended but may be changed to meet individual needs and interests.

ACCOUNTING CURRICULUM

Suggested Courses

Certificate Program

First Semester

	Sem Hrs	Sem Hrs
Gen Bus 151 – Business Communications	3	
Acct 111 or Acct 112 – Introductory	4	
Bus Mach 170 and 171** or 172 – Beg. or Inter. Typewriting	2,2	
Bus Mach 175 – Machine Calculation	2	
Econ 111 – Principles of Economics	3	
Gen Bus 110 – Business Computation	3	
	17,17	

Second Semester

	3	3
Gen Bus 152 – Business Communications	3	
Acct 112 or Acct Elective – Introductory	4,3	
Gen Bus 225 – Office Administration	3	
Econ 112 – Principles of Economics	3	
Data Proc 133 – Introduction	3	
	16,15	

MACHINE CALCULATION CURRICULUM

Certificate Program

First Semester

	Sem Hrs	Sem Hrs
Gen Bus 151 – Business Communications	3	
Acct 111 or 112 – Introductory	4	
Bus Mach 170 and 171** or 172 – Beg or Inter Typewriting	2,2	
Bus Mach 175 and 176 – Machine Calculation	4	
Gen Bus 110 – Business Computation	3	
	16	16

Second Semester

	3	3
Gen Bus 152 – Business Communications	3	
Bus Mach 172 or 273 – Inter. or Advanced Typewriting	2	
Bus Mach 274 – Voice Transcription	2	
Gen Bus 157 – Filing and Record Management	3	
Sec Sci 261 – Secretarial Practices	3	
Speech 112 – Principles of Public Speaking	3	
	16	

**Business Machines 170 and 171 will be waived if the department proficiency exam is passed.

SECRETARIAL CURRICULUM

Certificate Program

First Semester

	Sem Hrs	Sem Hrs
Gen Bus 151 – Business Communications	3	
Sec Sci 162* – Intermediate Shorthand	4	
Bus Mach 172* – Intermediate Typewriting	2	
Gen Bus 153 – Introduction to Business	3	
Bus Mach 175 – Machine Calculations	2	
Elective	3	
	17	

Second Semester

	Sem Hrs	Sem Hrs
Gen Bus 152 – Business Communications	3	
Sec Sci 263 – Dictation and Transcription	4	
Bus Mach 273 – Advanced Typewriting	2	
Gen Bus 157 – Filing and Records Management	3	
Elective	5	
	17	

* Electives may be substituted upon demonstration of equivalent skills.

Required:

Business	
Secretarial Science	8
Other	18
Total Business Required	26
 Electives	 8
Total Credits	34

Suggested Electives

Acct 111 – Introductory Accounting	
Bus Mach 274 – Voice Transcription and Copying Machine Procedures	
Data Proc 133 – Introduction to Data Processing	
Econ 111 – Essentials of Economics	
Gen Bus 110 – Business Computation	
Psy 101 – Applied Psychology	
Speech 112 – Principles of Public Speaking	

Any exceptions to the above curriculum must be approved by the Division Chairman.

ACCOUNTING CURRICULUM

Associate Degree Program

First Semester

	Sem Hrs
Acct 111 (or 211) – Introductory Accounting	4
Gen Bus 151 – Business Communications	3
Bus Mach 170 & 171* – Beginning Typewriting	2
Gen Bus 153 – Introduction to Business	3
Gen Bus 110 – Business Computation	3
	15

Second Semester

	4
Acct 112 (or 212) – Introductory Accounting	4
Gen Bus 152 – Business Communications	3
Bus Mach 175 – Machine Calculation	2
Data Proc 133 – Introduction to Data Processing	3
Elective	3
	15

Third Semester

	3
Acct 213 – Cost Accounting	3
Gen Bus 251 – Business Law	3
Pol Sci 103 – Intro. to American Government	3
Econ 111 – Essentials of Economics	3
Elective	3
PE – Elective – Activity	1
	16

Fourth Semester

	3
Acct 215 – Federal Tax Accounting	3
Gen Bus 255 – Office Administration or **	3
Elective	3
Elective	3
Elective	3
PE – Elective – Activity	1
	16

Required:

Business	
Accounting	14
Other	25
Total Business	39
Non-Business	5
State (Pol Sci)	3
Total required	47
Electives	15
Total Semester Hours	62

Suggested Electives:

Non-Business

Speech 112 – Principles of Public Speaking; Math 108 – Elementary Statistics; Psy 101 – Applied Psychology; Econ 112 – Essentials of Economics

Business

Acct 113 – Social Security and Payroll; Acct 217 – Auditing Theory and Procedure; Acct 223 – Intermediate Accounting; Acct 224 – Intermediate Accounting; Data Proc 235 – Data Processing Applications

** Dist Ed 245 – Principles of Management

Gen Bus 157 – Filing and Record Management; Gen Bus 252 – Business Law

* Bus Mach 170 & 171 will be waived for those students passing the Dept. Proficiency Exam.

* Bus Mach 170 may be waived for those students who already know the typewriter keyboard. See course descriptions on page in this catalog.

Any exception to the above curriculum must be approved by the Division Chairman.

AIRLINE HOSTESS CURRICULUM

This may be a one- or two-year course, which must be followed by short, intensive training of a few weeks either at a school operated by an airline or by one specializing in airline operations.

The following program recommended by a national airline is characteristic of suggestions made by other airlines.

Qualifications:

Age: 20 to 28

Marital Status: Single

Height: 5'2" to 5'7"

Weight: 130 pounds maximum in proportion to height

Attractive appearance and personality

Visual Acuity: 20/30 without corrective lenses

Suggested Preparatory Courses:

English, Psychology, Public Speaking, Sociology

Hygiene, Physiology

Languages

Music, Art

Geography, Political Science

Physical Education

The same airline states: If selected, the applicant will attend a training school, during which time she will be furnished room, board, and classroom equipment. Upon successful completion of the training program, she will be considered for employment, and, if accepted, will be assigned a base station.

AIRLINE HOSTESS – CLERICAL CURRICULUM

Associate Degree Program

First Semester

	Sem Hrs
Gen Bus 151 – Business Communications	3
Bus Mach 170 – Beginning Typewriting	1
Bus Mach 171 – Beginning Typewriting	1
or	
Bus Mach 172 – Intermediate Typewriting	2
Gen Bus 110 – Business Computation	3
Elective	6,7
PE – Elective – Activity	1
	15,16

Second Semester

Gen Bus 152 – Business Communications	3
Bus Mach 175 – Machine Calculation	2
Gen Bus 153 – Introduction to Business	3
Elective	6,7
PE – Elective – Activity	1
	15,16

Third Semester

Psy 101 – Applied Psychology	3
Data Proc 133 – Introduction to Data Processing	3
Gen Bus 157 – Filing and Records Management	3
Pol Sci 103 – Introduction to American Government	3
Elective	3
	15

Fourth Semester

Acct 111 – Introductory Accounting	4
Gen Bus 255 – Office Administration	3
Speech 112 – Principles of Public Speaking	3
Electives	5
	15

Required:

Business	29
State and Local Required	5
Non-Business Required	6
Total Required	40
Electives	22
Total Semester Hours	62

Suggested Electives

Bus Mach 274 – Voice Transcription and Copying Machine Procedures
Econ 111 – Essentials of Economics
Econ 112 – Essentials of Economic
HE 171 – Personal Health
Geog 113 – World Regional Geography
Psy 211 – General Psychology
Sec Sci 261 – Secretarial Practices
Soc 211 – Principles of Sociology
Soc 212 – Social Problems

Any exceptions to the above curriculum must be approved by the Division Chairman.

DATA PROCESSING CURRICULUM

Associate Degree Program

First Semester

	Sem Hrs
Data Proc 133 – Introduction to Data Processing	3
Acct 211 or Acct 111 – Prin of Acct or Intro to Acct	4
Math 119, 122, 131 or Gen Bus 110	3
Gen Bus 151 – Business Communications	
or Eng 111 – Freshman Composition	3
Data Proc 179 – Keypunching or Business Elective	2,3
PE – Elective – Activity	1
	16,17

Second Semester

Data Proc 134 – Machine Operation	3
Data Proc 243 – Report Program Generator Programming	3
Acct 212 or Acct 112 – Prin of Act or Intro to Acct	4
Gen Bus 152 – Business Communications	
or Eng 112 – Freshman Composition	3
Math 108 – Statistics or Math Elective	3
	16

Third Semester

Data Proc 235 – Data Processing Applications	3
Data Proc 245 – COBOL Programming	3
Econ 221 – Principles of Economics or Elective	4
Speech 112 – Principles of Public Speaking or Elective	3
PE – Elective – Activity	1
	14

Fourth Semester	
Data Proc 246 – PL/I Programming	3
Pol Sci 103 – Introduction to American Government	3
Econ 222 – Principles of Economics or Elective	4
Psy 101 – Applied Psychology or Business Elective	3
Elective	3
	16

Required for Associate Degree:	Hours
Data Proc*	18
Accounting	8
Math and/or Gen Bus 110	6
Gen Bus 151, 152 or Eng 111, 112	6
Pol Sci	3
Total Required	43

Suggested Electives:

- Gen Bus 153 – Introduction to Business
- Acct 213 – Cost Accounting
- Data Proc 239 – BAL Programming
- Dist Ed 243 – Marketing
- Gen Bus 251, 252 – Business Law
- Dist Ed 245 – Principles of Management

* Data Proc 250,251 or 239 may be substituted for part of the Data Processing requirements by students who enter the program on advanced placement.

Any exceptions to the above curriculum must be approved by the Division Chairman

Second Semester	
Acct 112 – Introductory Accounting	4
Coop Ed 122 – Cooperative Education	3
Elective	3
Gen Bus 153 – Introduction to Business	3
Speech 112 – Principles of Public Speaking	3
PE – Elective – Activity	1
	17

Third Semester	
Acct 213 – Cost Accounting	3
Coop Ed 221 – Cooperative Education	3
Data Proc 133 – Introduction to Data Processing	3
Gen Bus 251 – Business Law	3
Econ 280 – Money and Banking	3
	15

Fourth Semester	
Acct 217 – Auditing Theory and Procedure	3
Coop Ed 222 – Cooperative Education	3
Data Proc 235 – Data Processing Accounting Applications	3
Gen Bus 151 – Business Communications	3
Gen Bus 252 – Business Law	3
	15

Fifth Semester	
Gen Bus 152 – Business Communications	3
Phil 211 – Introduction to Philosophy	3
Pol Sci 103 – Introduction to American Government	3
Elective	3
	12

FINANCE AND BANKING CURRICULUM

Associate Degree Program

First Semester	Sem Hrs
Acct 111 – Introductory Accounting	4
Coop Ed 121 – Cooperative Education	3
Econ 111 – Essentials of Economics	3
Eng 111 – Freshman Composition	3
Gen Bus 110 – Business Computation	3
PE – Elective – Activity	1
	17

MANAGEMENT CURRICULUM

Associate Degree Program

First Semester	Sem Hrs
Acct 111 – Introduction to Accounting	4
Gen Bus 151 – Business Communications	3
Gen Bus 153 – Introduction to Business	3
Bus Mach 170* – Beginning Typewriting (7½ weeks)	1
Bus Mach 171* – Beginning Typewriting (7½ weeks)	1
Electives	3
PE – Elective – Activity	1
	16

Second Semester	
Acct 112 – Introduction to Accounting	4
Gen Bus 152 – Business Communications	3
Data Processing (To be arranged)	3
Electives	6
	16

Third Semester	
Gen Bus 251 – Business Law	3
Dist Ed 245 – Principles of Management	3
Pol Sci 103 – Introduction to American Government	3
Electives	5
PE – Elective – Activity	1
	15

Fourth Semester	
Gen Bus 255 – Office Administration	3
Dist Ed 243 – Marketing	3
Electives	9
	15

*Bus Mach 170 and 171 will be waived for those students passing the Department Proficiency Exam.

*Bus Mach 170 may be waived for those students who already know the typewriter keyboard.

Required	
Business	
Electives	34
(9 must be in Business)	23
State & local required	5
Total Semester Hours	62

Suggested Business Electives	
Dist Ed 145 – Sales	
Gen Bus 110 – Business Computations	
Data Proc 235 – Data Processing Applications	
Gen Bus 252 – Business Law	
Bus Mach 175 – Machine Calculation	
Gen Bus 157 – Filing and Records Management	
Acct 213 – Cost Accounting	
Dist Ed 141-142 – Transportation and Traffic Management	
Dist Ed 241-242 – Transportation and Traffic Management	
Co-op education may be elected for credit (3-12 credits)	
See J. Christensen, J-105	

Suggested Non-Business Electives	
Speech 112 – Principles of Public Speaking	
Psy 101 – Applied Psychology	

Econ 111 or 221 – Principles of Economics
Soc 211 – Principles of Sociology

Any exceptions to the above curriculum must be approved by the Division Chairman.

MARKETING CURRICULUM

Associate Degree Program

First Semester		Sem Hrs
Acct 111 – Introduction to Accounting		4
Gen Bus 151 – Business Communications		3
Gen Bus 153 – Introduction to Business		3
Bus Mach 170* – Beginning Typewriting (7½ weeks)		1
Bus Mach 171* – Beginning Typewriting (7½ weeks)		1
Elective		3
PE – Elective – Activity		1
		16

Second Semester		Sem Hrs
Data Proc – (To be arranged)		3
Gen Bus 152 – Business Communications		3
Dist Ed 243 – Marketing		3
Electives		6
		15

Third Semester		Sem Hrs
Gen Bus 251 – Business Law		3
Dist Ed 145 – Sales		3
Dist Ed 143 – Advertising		3
Pol Sci 103 – Introduction to American Government		3
Elective		3
PE – Elective – Activity		1
		16

Fourth Semester		Sem Hrs
Dist Ed 247 – Retailing		3
Gen Bus 255 – Office Administration or Dist Ed 245 – Principles of Management		3
Electives		9
		15

* Bus Mach 170 & 171 will be waived for those students passing the Department Proficiency Exam.

* Bus Mach 170 may be waived for those students who already know the typewriter keyboard. (See course descriptions on page in this catalog.)

Required	
Business	36
Electives (6 must be in Business)	21
State & local required	5
Total Semester Hours	62

Suggested Business Electives

Acct 112 – Introduction to Accounting	
Gen Bus 110 – Business Computation	
Data Proc 235 – Data Processing Applications	
Gen Bus 252 – Business Law	
Gen Bus 255 – Office Management	
Dist Ed 245 – Principles of Management	
Bus Mach 175 – Machine Calculations	
Gen Bus 157 – Filing and Records Management	
Co-op Ed may be elected for credit (3-12 credits).	
See J. Christensen, J-105	

Suggested Non-Business Electives

Speech 112 – Principles of Public Speaking	
Psy 101 – Applied Psychology	
Econ 111 or 221 – Essentials or Principles	
Soc 211 – Principles of Sociology	
Eng 115 and/or 116 – Basic Journalism Skills or News Reporting	
Art 115 and/or 116 – Basic Design Two or Three Dimensional	

Any exceptions to the above curriculum must be approved by the Division Chairman.

MEDICAL ASSISTANT CURRICULUM

Associate Degree Program

First Semester	Sem Hrs
Gen Bus 151 – Business Communications	3
Sec Sci 161* – Beginning Shorthand	4
Bus Mach 172* – Intermediate Typewriting	2
Sec Sci 165 – Orientation to Medical Office Work	1
Gen Bus 110 – Business Computation	3
HE 171 – Personal Health	3
	16

Second Semester

Gen Bus 152 – Business Communications	3
Sec Sci 162* – Intermediate Shorthand	4
Bus Mach 273 – Advanced Typewriting	2
Bus Mach 175 – Machine Calculation	2
Sec Sci 166 – Orientation to Community Health Service	1
Gen Bus 157 – Filing and Records Management	3
Biol 105 – Anatomy and Physiology for Medical Assistant or Health Sci 111 – Medical Terminology, or Elective	2
	17

Third Semester

Sec Sci 265 – Nursing Arts	3
Psy 101 – Applied Psychology	3
Bus Mach 274 – Voice Transcription and Copying Machine Procedures	2
Sec Sci 263 – Dictation and Transcription or Elective	3,4
Coop Ed 121 – Cooperative Office Education or Elective	3
PE – Elective – Activity	1
	15,16

Fourth Semester

Acct 111 – Introductory Accounting	4
Sec Sci 261 – Secretarial Practices	3
Sec Sci 266 – Orientation to the Medical Laboratory	3
Pol Sci 103 – Introduction to American Government	3
Coop Ed 122 – Cooperative Office Education or Elective	3
PE – Elective – Activity	1
	17

* Electives may be substituted upon demonstration of equivalent skills.

Required

Specified Business (Sec Sci) Required	25
Specified Business (Other) Required	18
Total Business Required	43
Other required	6
State required	3
Phys Ed required	2
Total Required	54
Electives	8,12
Total Semester Hours	62,66

Suggested Electives

Sec Sci 263 – Dictation and Transcription	
Sec Sci 264 – Speed Building and Specialized Shorthand	
Coop Ed 221, 222 – Cooperative Office Education	
Speech 112 – Principles of Public Speaking	
Econ 111 – Essentials of Economics	
Gen Bus 255 – Office Administration	
Data Proc 133 – Introduction to Data Processing	
Gen Bus 251 – Business Law	
Bus Mach 179 – Key Punching and Verifying	

Any exceptions to the above curriculum must be approved by the Division Chairman.

REAL ESTATE CURRICULUM*

Associate Degree Program

First Semester

	Sem Hrs
RE 181 – Real Estate Principles I	3
Gen Bus 110 – Business Computation	3
Acct 111 – Introductory Accounting	4
Gen Bus 151 – Business Communications	3
Bus Mach 170 & 171† – Beginning Typewriting (7½ weeks)	2
PE – Elective – Activity	1
	16

Second Semester

RE 183 – Real Estate Procedure	3
RE 182 – Real Estate Principles II	3
Data Proc 133 – Introduction to Data Processing	3
Acct 112 – Introductory Accounting	4
Gen Bus 152 – Business Communications	3
PE – Elective – Activity	1
	17

Third Semester

RE 281 – Real Estate & Government	3
Acct 215 – Federal Tax Accounting	3
Dist Ed 145 – Sales	3
Gen Bus 153 – Introduction to Business	3
Gen Bus 251 – Business Law	3
	15

Fourth Semester

RE 282 – Real Estate Finance	3
RE 283 – Real Estate Appraisal	3
Pol Sci 103 – Introduction to American Government	3
Elective	3
Arch Tech 101 – Materials and Methods of Architectural Construction	2
Bus Mach 175 – Machine Calculation	2
	16

* Students who complete this program will be exposed to the material required for the salesman's license examination. They will also have completed the subject matter required by the National Association of Real Estate Boards for the new G.R.I. rating (Graduate Realtors Institute).

†Business Machines 170 and 171 will be waived if the Department Proficiency Exam is passed.

RETAIL MID-MANAGEMENT CURRICULUM

Associate Degree Program

First Semester

	Sem Hrs
Gen Bus 153 – Introduction to Business	3
Coop Ed 125 – Cooperative Distributive Education	3
Gen Bus 151 – Business Communications	3
Speech 112 – Principles of Public Speaking	3
Bus Mach 170* – Beginning Typewriting (7½ weeks)	1
Bus Mach 171* – Beginning Typewriting (7½ weeks) or Elective	1,3
PE – Elective – Activity	1
	15,17

Second Semester

Gen Bus 152 – Business Communications	3
Acct 111 – Introductory Accounting	4
Dist Ed 247 – Retailing	3
Coop Ed 126 – Cooperative Distributive Education	3
PE – Elective – Activity	1
	14

Third Semester

Coop Ed 225 – Cooperative Distributive Education	3
Business Electives	6
	9

Fourth Semester

Psy 101 – Applied Psychology	3
Dist Ed 243 – Principles of Marketing	3
Coop Ed 226 – Cooperative Distributive Education	3
Dist Ed 143 – Advertising	3
Non-Business Elective	3
	15

Fifth Semester

Gen Bus 251 – Business Law	3
Dist Ed 245 – Principles of Management	3
Pol Sci 103 – Introduction to American Government	3
Dist Ed 145 – Sales	3
Non-Business Elective	3
	15

* Electives may be substituted upon demonstration of equivalent skills.

Suggested Electives

Data Proc 133 – Introduction to Data Processing
Acct 112 – Introductory
Gen Bus 110 – Business Computation
Gen Bus 252 – Business Law

Gen Bus 255 – Office Administration
Gen Bus 157 – Filing and Records Management
Dist Ed 141 – Transportation and Traffic Management
Bus Mach 175 – Machine Calculation
Econ 111 or 221 – Essentials or Principles
Soc 211 – Principles
Eng 111 – Freshman Composition
Art 115 – Basic Design—Two Dimensional

Arrangements for **Cooperative Distributive Education** should be made with J. Christensen, J-105

Any exceptions to the above curriculum must be approved by the Division Chairman.

CHEMICAL SECRETARIAL CURRICULUM

Associate Degree Program

First Semester

	Sem Hrs
Gen Bus 151 – Business Communications	3
Sec Sci 161* – Beginning Shorthand	4
Bus Mach 170* – Beginning Typewriting (7½ weeks)	1
Bus Mach 171* – Beginning Typewriting (7½ weeks)	1
Gen Bus 153 – Introduction to Business	3
Gen Bus 110 – Business Computation	3
PE – Elective – Activity	1
	16

Second Semester

Gen Bus 152 – Business Communications	3
Sec Sci 162* – Intermediate Shorthand	4
Bus Mach 172* – Intermediate Typewriting	2
Gen Bus 157 – Filing and Records Management	3
Acct 111 – Introductory Accounting	4
	16

Third Semester

Sec Sci 263 – Dictation and Transcription	4
Bus Mach 273 – Advanced Typewriting or	
Bus Mach 274 – Voice Transcription and Copying Machine Procedures	2
Bus Mach 175 – Machine Calculations	2
Chem 101 – General Chemistry	5
Psy 101 – Applied Psychology or Elective	2,3 15,16

Fourth Semester

Sec Sci 264 – Speed Building and Specialized Shorthand	3
Sec Sci 261 – Secretarial Practices	3
Data Proc 133 – Introduction to Data Processing	3
Pol Sci 103 – Introduction to American Government	3
Elective	2
PE – Elective – Activity	1
	15

*Electives may be substituted upon demonstration of equivalent skills.

Required

Business	
Secretarial Science	18
Other	30
Total Business Required	48
State and local required	5
Non-Business required	5
Total Required	58
Electives	4
Total Semester Hours	62

Suggested Electives

Bus Mach 179 – Key Punching and Verifying
Acct 113 – Social Security and Payroll Accounting
Gen Bus 251 – Business Law
Gen Bus 255 – Office Administration
Coop Ed 121, 122, 221, 222 – Cooperative Office Education
Chem 102 – General Chemistry
Econ 111 – Essentials of Economics
Speech 112 – Principles of Public Speaking

Any exceptions to the above curriculum must be approved by the Division Chairman.

LEGAL SECRETARIAL CURRICULUM

Associate Degree Program

First Semester

	Sem Hrs
Gen Bus 151 – Business Communications	3
Sec Sci 161* – Beginning Shorthand	4
Bus Mach 170* – Beginning Typewriting (7½ weeks)	1
Bus Mach 171* – Beginning Typewriting (7½ weeks)	1
Gen Bus 153 – Introduction to Business	3
Gen Bus 110 – Business Computation	3
PE – Elective – Activity	1
	16

Second Semester

Gen Bus 152 – Business Communications	3
Sec Sci 162* – Intermediate Shorthand	4
Bus Mach 172* – Intermediate Typewriting	2
Data Proc 133 – Introduction to Data Processing	3
Gen Bus 157 – Filing and Records Management	3
PE – Elective – Activity	1
	16

Third Semester

Sec Sci 263 – Dictation and Transcription	4
Bus Mach 273 – Advanced Typewriting	2
Acct 111 – Introductory Accounting	4
Bus Mach 175 – Machine Calculation	2
Gen Bus 251 – Business Law	3
	15

Fourth Semester

Sec Sci 264 – Speed Building and Specialized Shorthand	3
Sec Sci 261 – Secretarial Practices	3
Bus Mach 274 – Voice Transcription and Copying Machine Procedures	2
Gen Bus 252 – Business Law	3
Pol Sci 103 – Introduction to American Government	3
Elective	1
	15

* Electives may be substituted upon demonstration of equivalent skills.

Required

Business	
Secretarial Science	18
Other	38
Total Business Required	56
State and local required	5
Total Required	61
Elective	1
Total Semester Hours	62

Suggested Electives

Acct 113 – Social Security and Payroll Accounting
Bus Mach 179 – Key Punching and Verifying
Coop Ed 121, 122, 221, 222 – Cooperative Office Education
RE 181 – Real Estate Principles I
Gen Bus 255 – Office Administration
Econ 111 – Essentials of Economics
Psy 101 – Applied Psychology
Speech 112 – Principles of Public Speaking

Any exceptions to the above curriculum must be approved by the Division Chairman.

SECRETARIAL CURRICULUM (GENERAL)

Associate Degree Program

First Semester

	Sem Hrs
Gen Bus 151 – Business Communications	3
Bus Mach 170* – Beginning Typewriting (7½ weeks)	1
Bus Mach 171* – Beginning Typewriting (7½ weeks)	1
Sec Sci 161* – Beginning Shorthand	4
Gen Bus 153 – Introduction to Business	3
Gen Bus 110 – Business Computation	3
PE – Elective – Activity	1
	16

Second Semester

Gen Bus 152 – Business Communications	3
Sec Sci 162* – Intermediate Shorthand	4
Bus Mach 172* – Intermediate Typewriting	2
Gen Bus 157 – Filing and Records Management	3
Data Proc 133 – Introduction to Data Processing	3
PE – Elective – Activity	1
	16

Third Semester

Sec Sci 263 – Dictation and Transcription	4
Bus Mach 273 – Advanced Typewriting	2
Acct 111 – Introductory Accounting	4
Bus Mach 175 – Machine Calculation	2
Psy 101 – Applied Psychology or Elective	3
	15

Fourth Semester

Sec Sci 264 – Speed Building and Specialized Shorthand	3
Sec Sci 261 – Secretarial Practices	3
Acct 113 – Social Security and Payroll Accounting	2
Pol Sci 103 – Introduction to American Government	3
Elective	4
	15

* Electives may be substituted upon demonstration of equivalent skills.

Required

Business	
Secretarial Science	18
Other	32
Total Business	50
State and local required	5
Total Required	55
Electives	7
Total Semester Hours	62

Suggested Electives

Bus Mach 274 – Voice Transcription and Copying Machine Procedures
Bus Mach 179 – Key Punching and Verifying
Coop Ed 121, 122, 221, 222 – Cooperative Office Education
Gen Bus 255 – Office Administration
Econ 111 – Essentials of Economics
Speech 112 – Principles of Public Speaking

Any exceptions to the above curriculum must be approved by the Division Chairman.

DENTAL ASSISTANT CURRICULUM**Associate Degree Program**

First Semester	Sem Hrs
DA 101 – Introduction to Dental Assisting	4
DA 102 – Dental Anatomy and Physiology	2
Bas Sci 101 – Integrated Basic Science	5
Gen Bus 157 – Filing and Record Management	3
Bus Mach 170 & 171 – Beginning Typewriting (7½ weeks each)	2
PE – Elective – Activity	1
	17

Second Semester

DA 103 – Dental Materials and Lab Procedures	4
DA 104 – Dental Instruments and Equipment	2
Gen Bus 151 – Business Communications	3
DA 105 – Pathology and Pharmacology	3
Psy 101 – Applied Psychology	3
PE – Elective – Activity	1
	16

Third Semester

Soc 121 – Preparation for Marriage and Family Living	3
DA 201 – Dental Roentgenology	3
DA 202 – Operative Procedures	4
DA 203 – Dental Records and Practice Administration	2
Gen Bus 152 – Business Communications	3
	15

Fourth Semester

Speech 112 – Principles of Public Speaking	3
DA 210 – Internship	7
Pol Sci 103 – Introduction to American Government	3
Elective	3

NURSING CURRICULUM

Associate Degree Program

The nursing program prepares selected young men and women to function effectively as members of the health team. The student will develop the ability to be self-directing, to identify problems, and to work toward achieving satisfactory solutions. He will develop the basic knowledge and skills necessary for the nurse's role in the care of the patient.

The nursing program is five semesters in length. It includes 34 semester hours in general education and 32 semester hours in nursing education. Clinical laboratory experiences are offered the student under the supervision of the college nursing faculty. Various health agencies of the Saginaw Valley are utilized in offering these experiences to the student.

Upon successful completion of the program of study the student will be awarded the Associate in Applied Science Degree by Delta College.

The nursing program is approved by the Michigan Board of Nursing. The student, after graduation, is eligible to sit for the State Board Examinations, leading to Michigan Licensure and the privilege of using the title of Registered Nurse (RN).

General Education Courses	Sem Hrs
Eng 111 – Freshman Composition	3
Eng 112 – Freshman Composition	3
Bas Sci 101 – Integrated Basic Science	5
Bas Sci 102 – Integrated Basic Science	5
Pol Sci 103 – Introduction to American Government	3
Soc 211 – Principles of Sociology	3
PE – Elective – Activity	1
PE – Elective – Activity	1
Psy 211 – General Psychology	4
Psy 231 – Personality	3
Elective – Speech or Literature	3
	34

Nursing Courses	Sem Hrs
Nursing 111 – Fundamentals of Nursing	8
Nursing 211 – Nursing in Physical and Mental Illness	8
Nursing 112 – Maternal and Child Nursing	8
Nursing 212 – Nursing in Physical and Mental Illness	8
Nursing 213 – Trends in Nursing	2
	34

The catalog course descriptions should be checked prior to registration for prerequisites.

RADIOLOGIC TECHNOLOGY CURRICULUM

Associate Degree Program

First 15 week Semester	Sem Hrs
Bas Sci 101 – Integrated Basic Science	5
Rad Tech 111 – Introduction to Radiologic Technology	3
PE 101 – Physical Fitness	1
Elective	3,4
	12,13

Second 15-week Semester	Sem Hrs
Eng 111 – Freshman Composition	3
Rad Tech 101 – Radiographic Anatomy	3
Rad Tech 112 – Radiologic Technology I	4
PE – Elective – Activity	1
Health Sci 111 – Medical Terminology	2
	13

Third 15-week Semester	Sem Hrs
Eng 112 – Freshman Composition	3
Rad Tech 102 – Radiographic Physics	3
Rad Tech 113 – Radiologic Technology II	8
	14

Fourth 15-week Semester	Sem Hrs
Psy 101 – Applied Psychology	3
Bus Mach 170 & 171 – Beginning Typewriting (7½ weeks each)	2
Rad Tech 211 – Advanced Radiologic Technology I	11
	16

Fifth 15-week Semester	Sem Hrs
Soc 211 – Principles of Sociology	3
Pol Sci 103 – Introduction to American Government	3
Rad Tech 212 – Advanced Radiologic Technology II	11
	17

Sixth 15-week Semester	Sem Hrs
Rad Tech 213 – Advanced Radiologic Technology III	15

Seventh and Eighth 15-week Semesters	Sem Hrs
Rad Tech 311* – Radiologic Internship	12
Rad Tech 312* – Radiologic Internship	12

* Follow in consecutive order with no semester break.

BROADCASTING CURRICULUM

Associate Degree Program

The Delta College Broadcasting Curriculum combines special radio-television courses with general education classes. Students work with professional broadcasters who serve as teaching faculty. Experience in the College's Television Department may be coupled with on-the-job training at local commercial stations.

Upon successful completion of the four-semester Broadcasting Curriculum, students are eligible for an Associate Degree in Arts or an Associate Degree in Applied Science, depending on selection of electives. In fundamentals of broadcasting, for example, freshmen composition, physical education, and political science augment a block of radio-television classes, including speaking and announcing, studio operations, broadcast news, oral interpretation, broadcast sales, and television production and direction.

	Sem Hrs	
First Semester		
Eng 111 – Freshman Composition	3	
RTV 149 – Broadcasting Laboratory	3	
RTV 150 – Radio and Television Writing	3	
RTV 156 – Radio Broadcasting	3	
Pol Sci 111 – American Government and Politics or Pol Sci 103 – Introduction to American Government	4,3 16,15	
Second Semester		
Eng 112 – Freshman Composition	3	
RTV 153 – Broadcast Performance	3	
RTV 154 – Fundamentals of Studio Operations	3	
RTV 157 – Cinematography for Television	3	
Elective	3	
	15	
Third Semester		
Econ 221 – Principles of Economics	4	
RTV 220 – Communications History, Law and Responsibilities	3	
RTV 222 – Broadcast Journalism	3	
RTV 225 – Advanced Studio Operations	3	
Speech 213 – Oral Interpretation of Literature or Speech 112 – Principles of Public Speaking	3 16	
Fourth Semester		
RTV 227 – Broadcast Sales	3	
RTV 251 – Television Producing and Directing	3	
Electives	9	
	15	

The Television Department will attempt to provide work-related experiences in broadcasting stations for students who are qualified and desire such experience.

Those students who intend to transfer and pursue a baccalaureate degree should consult with a counselor when choosing electives.

LAW ENFORCEMENT CURRICULUM

Associate Degree Program

Delta College offers a Law Enforcement program that is designed to give specialized knowledge of law enforcement combined with a broad general educational background. The program offers theoretical, practical, and technical instruction designed to meet ever-increasing demands and continuous upgrading by law enforcement agencies, including skills and attitudes required for employment or advancement.

Students graduating from Delta College's two-year Law Enforcement curriculum receive an Associate Degree in Applied Science and are eligible for immediate employment or transfer to leading state university Law Enforcement Programs.

	Sem Hrs
First Semester	
Pol Sci 103 – Introduction to American Government	3
Eng 111 – Freshman Composition	3
LE 110 – Introduction to Law Enforcement	3
LE 111 – Police Organization and Administration	3
Speech 112 – Principles of Public Speaking	3
PE 101 – Physical Fitness	1
	16

	Sem Hrs
Second Semester	
Eng 112 – Freshman Composition	3
Biol 111 – Principles of Biology	4
LE 112 – Police Operations	3
Chem 101 – General Chemistry or Geol 111 - Physical Geology	5,4
PE 125 – Judo or PE 128 – Wrestling	1
	16,15

	Sem Hrs
Third Semester	
Psy 211 – General Psychology	4
Soc 211 – Principles of Sociology	3
Hist Elective*	4,3
LE 210 – Introduction to Criminal Investigation	3
LE 250 – Juvenile Delinquency	3
	17,16

	Sem Hrs
Fourth Semester	
LE 260 – Legal & Criminal Behavior	3
LE 270 – Evidence & Criminal Procedure	3
LE 271 – Criminal Law	3
Approved Elective**	3
Approved Elective**	3
	15

*History electives: Hist 111 – Survey of Early Western Civilization, Hist 112 – Survey of Later Western Civilization, Hist 221 – U.S. to 1865, Hist 222 – 1865 to Present.

** For transfer to Michigan State University and Wayne State University, a course in Social Studies and a course in Humanities is needed.

Delta College offers Public Service programs that are designed to give knowledge of public service combined with a broad educational background. Upon successful completion of the program, the student will be awarded the degree of Associate in Arts for the Urban-professional Assistant program and the Social Health Services Assistant or Associate of Applied Science in the Engineering Assistant program.

PUBLIC SERVICE: Engineering Assistant

Associate Degree Program

First Semester	Sem Hrs
Math 101 – Technical Mathematics I	5
Pol Sci 103 – Introduction to American Government or Pol Sci 111 – American Government and Politics	3,4
Draw 105 – Industrial Drafting	3
Eng 111 – Freshman Composition	3
PE – Elective – Activity	1
	15,16
Second Semester	
Math 102 – Technical Mathematics II	5
Pol Sci 128 – Urban Public Service	3
Dr 106 – Industrial Drafting	3
Chem 111 – General & Inorganic	4
PE – Elective – Activity	1
	16
Third Semester	
Phys 111 – General Physics	4
Chem 112 – General & Inorganic	4
Econ 221 – Principles of Economics	4
Dr 156 – Descriptive Geometry	3
	15
Fourth Semester	
Phys 112 – General Physics	4
Arch Tech 221 – Site Preparation	2
Eng 113 – Technical Writing	3
Pol Sci 228 – Internship*	3
Elective	3
	15

* Internship in government unit may be taken in other than 4th semester.

Suggested Electives: Math 108 – Elementary Statistics; Speech 112 – Principles of Public Speaking.

PUBLIC SERVICE: Social Health Service Assistant

Associate Degree Program

First Semester	Sem Hrs
Eng 111 – Freshman Composition	3
Elective in Humanities	3
Pol Sci 103 – Introduction to American Government or Pol Sci 111 – American Government and Politics	3,4
Soc 121 – Marriage and the Family	3
Biol 111 – General Biology*	4
	16,17

Second Semester

Eng 112 – Freshman Composition	3
Soc 150 – Community Organization	3
Pol Sci 128 – Urban Public Service	4
Biol 112 – General Biology*	4
PE – Elective – Activity	1
	15

Third Semester

Data Proc 133 – Introduction to Data Processing	3
Econ 221 – Principles of Economics	4
Psy 211 – General Psychology	4
Soc 211 – Principles of Sociology	3
PE – Elective – Activity	1
	15

Fourth Semester

Econ 222 – Principles of Economics*	4
Psy 231 – Personality	3
Pol Sci 228 – Internship**	3
Elective – Humanities	3
Soc 212 – Social Problems	3
	16

* Course may be substituted, depending on the objectives of the student, substitutions will be approved by the faculty adviser.

** Internship in government unit may be taken in other than 4th semester.

Suggested Electives: Math 108 – Elementary Statistics; Speech 112 – Principles of Public Speaking; Health 171 – Personal Health; History 214-215 – Black Man in the Americas.

PUBLIC SERVICE: Urban Professional Assistant

Associate Degree Program

	Sem Hrs
First Semester	
Eng 111 – Freshman Composition	3
Elective in Humanities	3
Pol Sci 103 – Introduction to American Government or Pol Sci 111 – American Government and Politics	3,4
Data Proc 133 – Introduction to Data Processing	3
Geog 113 – World Regional Geography	4
	16,17
Second Semester	
Eng 112 – Freshman Composition	3
Soc 150 – Community Organization	3
Pol Sci 128 – Urban Public Service	4
Speech 112 – Principles of Public Speaking	3
Elective	3
	16
Third Semester	
Econ 221 – Principles of Economics	4
Psy 211 – General Psychology	4
Soc 211 – Principles of Sociology	3
Geog 211 – Economic Geography*	4
PE – Elective – Activity	1
	16
Fourth Semester	
Econ 222 – Principles of Economics	4
Soc 212 – Social Problems	3
Pol Sci 228 – Internship**	3
Pol Sci 227 – Political Parties	3
PE – Elective – Activity	1
	14

* Courses may be substituted, depending upon the objectives of the student. Substitutes will be approved by the faculty adviser.

** Internship in governmental unit may be taken in other than fourth semester.

Suggested Electives: Math 108 – Elementary Statistics; History 214-215 Black Man in the Americas.

TECHNICAL CAREER PROGRAMS

Associate Degree and Certificate Curricula. The technical programs at Delta College evolved at the request of local industry. After many months of study and development, these college-level courses were offered to interested students for preparing them to enter well-paid positions in industry. To achieve this end, the curricula are practical in nature and job-oriented in purpose.

The current trend is toward fewer unskilled jobs and increased emphasis on technical training. The demand for skilled technicians will continue to increase along with the need for professionally trained personnel. Successful completion of a curriculum enables a vocationally oriented student to enter an available position as a member of the American Industrial team.

The programs are broad in nature, serve a variety of industrial requirements, and they provide the necessary base for future upgrading of the individual as required by a changing technology. Continual review and improvement render the curricula immediately relevant and practical.

ARCHITECTURAL TECHNOLOGY CURRICULUM

Associate Degree Program

	Sem Hrs
First Semester	
Arch Tech 105 – Architectural Drafting I	7
Arch Tech 101 – Materials and Methods of Architectural Construction	2
Math 101 – Technical Mathematics I	5
PE – Elective – Activity	1
	15
Second Semester	
Arch Tech 106 – Architectural Drafting II	7
Arch Tech 111 – Mechanical and Electrical Equipment for Buildings	4
Eng 111 – Freshman Composition	3
Art 153 – History of Architecture	2
PE – Elective – Activity	1
	17
Third Semester	
Math 102 – Technical Mathematics II	5
Eng 113 – Technical Writing	3
	8
Fourth Semester	
Arch Tech 205 – Architectural Drafting III	7
Arch Tech 221 – Site Preparation	2
Phys 101 – Applied Physics	5
Arch Tech 202 – Specifications and Contracts	2
	16
Fifth Semester	
Arch Tech 206 – Architectural Drafting IV	7
Arch Tech 211 – Elements of Structural Design	4
Arch Tech 203 – Estimating	2
Pol Sci 103 – Introduction to American Government	3
	16

AUTOMOTIVE SERVICE TECHNOLOGY CURRICULUM

Associate Degree Program

First Semester

	Sem Hrs
Auto Tech 101 – Automotive Service Orientation and Maintenance	3
Auto Tech 103 – Basic Engines	3
Auto Tech 105 – Electrical Systems	2
Auto Tech 106 – Automotive Electricity	3
Mathematics (Dr 110 recommended)	4
PE – Elective – Activity	1
	16

Second Semester

Auto Tech 110 – Diagnosis and Tune-Up	3
Auto Tech 111 – Cranking and Charging Systems	3
Auto Tech 112 – Laboratory Practice	2
Auto Tech 114 – Emission Control	2
Communication – 5 hours required (English 101 recommended)	5
PE – Elective – Activity	1
	16

Third Semester

Auto Tech 206 – Wheel Alignment	3
Auto Tech 207 – Brake Service	3
Auto Tech 208 – Laboratory Practice	2
Auto Tech 209 – Electrical Circuits	3
Pol Sci 103 – Introduction to American Government	3
	14

Fourth Semester

Auto Tech 211 – Driveline Fundamentals	7
Auto Tech 212 – Laboratory Practice	2
Auto Tech 213 – Service Management	4
Psy 101 – Applied Psychology	3
	16

AUTOMOTIVE SERVICE CURRICULUM

Certificate Program

First Semester

	Sem Hrs
Auto Tech 101 – Service Orientation and Maintenance	3
Auto Tech 103 – Engines	3
Auto Tech 105 – Laboratory Practice	2
Auto Tech 106 – Automotive Electricity	3
Math 91 – Arithmetic	2
PE – Elective – Activity	1
	14

Second Semester

Auto Tech 110 – Diagnosis and Tune-Up	3
Auto Tech 111 – Cranking and Charging Systems	3
Auto Tech 112 – Laboratory Practice	2
Auto Tech 114 – Emission Controls	2
Eng 101 – Contemporary English	5
	15

Third Semester

Auto Tech 206 – Wheel Alignment	3
Auto Tech 207 – Brake Service	3
Auto Tech 208 – Laboratory Practice	2
Auto Tech 209 – Electrical Circuits	3
Pol Sci 103 – Introduction to American Government	3
PE – Elective – Activity	1
	15

Fourth Semester

Auto Tech 211 – Driveline Fundamentals	7
Auto Tech 212 – Laboratory Practice	2
Auto Tech 213 – Service Management	4
Psy 101 – Applied Psychology	3
	16

AUTOMOTIVE SERVICE SPECIALIST CURRICULUM

Certificate Program

First Semester

	Sem Hrs
Auto Tech (Specialist) 101 – Service Orientation and Maintenance	12

Second Semester

Auto Tech (Specialist) 102 – Electrical and Fuel System Service	12
---	----

Third Semester

Auto Tech (Specialist) 103 – Suspension and Brake Service	12
---	----

DRAFTING AND DESIGN CURRICULUM

Certificate Program

First Semester

	Sem Hrs
Dr 111 – Engineering Drawing	5
Dr 112 – Engineering Drawing	5
Mech Tech 111 – Manufacturing Processes	3

Second Semester

Dr 113 – Tool Design	5
Dr 114 – Tool Design	5
Dr 110 – Dimensional Measurement	4

Third Semester	
Dr 115 – Die Design	5
Dr 116 – Die Design	5
Mech Tech 213 – Machine Tools	3
	13

ELECTRONIC TECHNOLOGY CURRICULUM

Associate Degree Program

First Semester	Sem Hrs
Math 101 – Technical Mathematics I	5
Dr 105 – Industrial Drafting	3
Eln Tech 111 – Fundamentals of DC Circuits	4
Eln Tech 115 – Electronics Devices	2
PE – Elective – Activity	1
	15

Second Semester

Math 102 – Technical Mathematics II	5
Eln Tech 112 – Fundamentals of AC Circuits	3
Eln Tech 116 – Electronic Devices and Circuits	2
Mech Tech 213 – Machine Tools	3
Eng 111 – Freshman Composition	3
	16

Third Semester

Math 103 – Technical Mathematics III	5
Eln Tech 213 – Solid State Devices	3
Eln Tech 214 – AC and DC Machines and Controls	2
Phys 111 – General Physics	4
Eng 113 – Technical Writing	3
	17

Fourth Semester

Eln Tech 214 – Design of Electronic Circuits	4
Eln Tech 215 – Electronic Control and Automation	4
Mech Tech 250 – Electronic Mechanics	3
Chem 101 – General Chemistry	5
PE – Elective – Activity	1
	17

Fifth Semester

Dr 216 – Electrical Drafting	2
Eln Tech 231 – Electronic Fabrication	3
Speech 112 – Principles of Public Speaking	3
Econ 111 – Essentials of Economics	3
Pol Sci 103 – Introduction to American Government	3
Bus Mach 175 – Machine Calculation	2
	16

INDUSTRIAL SUPERVISION

Certificate Program

Requirements for the completion of Industrial Supervision Certificate

1. For entry, two year's supervisory experience, identified by employer as managerial in nature or recommendation of employer;
2. Individual program to be agreed upon by the employee, employer's adviser, and representative from Delta College (counselor);
3. Completion of thirty semester hours:
 - a. While completing or following the completion of the supervisory experience, IS 294 or IS 110. 3 Sem Hrs
 - b. Communications 5 to 7 Sem Hrs
 - c. Human Relations 3 to 4 Sem Hrs
 - d. Technology other than "a" (see courses under Technology area) 6 to 7 Sem Hrs
 - e. Political Science 103 3 Sem Hrs
 - f. Physical Education 1 Sem Hr
 - g. Electives: The number of courses dependent on semester hours of required course work previously completed Varied Sem Hrs
 - h. Any Delta College general requirements for certificate completion Varied Sem Hrs

INDUSTRIAL SUPERVISION

Associate Degree Program

Requirements for Completion of Associate Degree in Industrial Supervision

1. The requirements for entry into the Industrial Supervision Associate Degree Program are the same as those for the Certificate Program.
2. If student desires, all credits earned on his Industrial Supervision Certificate Curriculum will apply on the Degree program.
3. The following are additional requirements:
 - a. Physical Education, in addition to "f" under Industrial Supervision Certificate 1 Sem Hr
 - b. Human Relations, in addition to "c" under Industrial Supervision Certificate 9 to 12 Sem Hrs
 - c. Electives to fit individual needs, the number of courses is dependent on hours of appropriate course work previously completed Varied Sem Hrs
4. Any Delta College general requirements for Associate Degree completion Varied Sem Hrs

INSTRUMENTATION TECHNOLOGY CURRICULUM

Associate Degree Program

First Semester

	Sem Hrs
Math 101 – Technical Mathematics I	5
Dr 105 – Industrial Drafting	3
EIn Tech 111 – Fundamentals of DC Circuits	4
EIn Tech 115 – Electronic Devices	2
PE – Elective – Activity	1
	15

Second Semester

Math 102 – Technical Mathematics II	5
EIn Tech 112 – Fundamentals of AC Circuits	3
EIn Tech 116 – Electronic Devices and Circuits	2
Mech Tech 213 – Machine Tools	3
Mech Tech 220 – Introduction to Fluid Power	3
PE – Elective – Activity	1
	17

Third Semester

Math 103 – Technical Mathematics III	5
EIn Tech 213 – Solid State Devices	3
EIn Tech 241 – AC and DC Machines and Controls	2
Phys 111 – General Physics	4
Eng 111 – Freshman Composition	3
	17

Fourth Semester

EIn Tech 214 – Design of Electronic Circuits	4
EIn Tech 215 – Electronic Control and Automation	4
EIn Tech 252 – Basic Industrial Instrumentation	4
Bus Mach 175 – Machine Calculation	2
Electives	3,4
	17,18

Fifth Semester

Dr 216 – Electrical Drafting	2
EIn Tech 231 – Electronic Fabrication	3
Speech 112 – Principles of Public Speaking	3
Econ 111 – Principles of Economics	3
Pol Sci 103 – Introduction to American Government	3
Eng 113 – Technical Writing	3
	17

MECHANICAL TECHNOLOGY CURRICULUM

Associate Degree Program

First Semester

	Sem Hrs
✓Dr 105 – Industrial Drafting	3
✓Mech Tech 111 – Manufacturing Processes	3
✓Math 101 – Technical Mathematics I	5
✓Eng 111 – Freshman Composition	3
PE – Elective – Activity	1
	15

Second Semester

✓Dr 106 – Industrial Drafting	3
✓Math 102 – Technical Mathematics II	5
✓Phys 101 – General Physics	5
Eng 113* – Technical Writing	3
PE – Elective – Activity	1
	17

Third Semester

Dr 156 – Descriptive Geometry	3
Mech Tech 213** – Machine Tools	3
Mech Tech 220** – Introduction to Fluid Power	3
Econ 111 – Essentials of Economics	3
Mech Tech 215** – Methods of Engineering	3
	15

Fourth Semester

Mech Tech 205 – Basic Kinematics	3
✓Mech Tech 221** – Metallurgy	3
✓Mech Tech 251 – Mechanics	3
Pol Sci 103 – Introduction to American Government	3
✓EIn Tech 235 – Electrical Circuits	4
	16

Fifth Semester

Mech Tech 256 – Machine Design	3
Mech Tech 252 – Strength of Materials	3
Chem 101 – General Chemistry	4
Speech 112 – Principles of Public Speaking	3
Elective	3
	16

*English 113 may be replaced with English 112.

**May be taken third or fourth semester.

Suggested Electives: (Specific electives may be taken only with the prior consent of a faculty adviser.) Data Processing 133; Mathematics 147; Mechanical Technology 214, 222, 162, 181, and 282; Electronic Technology 111 and 112; Business Machines 175.

RESIDENTIAL CONSTRUCTION TECHNOLOGY

Associate Degree Program

First Semester

	Sem Hrs
RC 101 – Construction Print Interpretation	3
RC 102 – Building Materials	4
RC 103 – Framing Square	5
RC 104 – Construction Laboratory I	2
Pol Sci 103 – Introduction to American Government	3
	17

Second Semester

RC 105 – Building Site Surveying	5
RC 106 – Concrete Slab Work	4
RC 107 – Footings and Foundations	5
Eng 111 – English Composition	3
	17

Third Semester

RC 201 – Rough Framing and Outside Finishing	5
RC 202 – Building Materials Estimation	3
RC 203 – Construction Laboratory II	5
Eng – Elective	3
PE – Elective – Activity	1
	17

Fourth Semester

RC 204 – Inside Finishing and Hardware	5
RC 205 – Cabinet Making and Millwork	5
RC 206 – Electrical-Mechanical-Plumbing Equipment	3
Psy 101 – Applied Psychology	3
PE – Elective – Activity	1
	17

COURSE DESCRIPTION

Courses in a particular subject field are distinguished by identifying numbers and course titles. The credit value of each course is indicated in semester hours following the title of the course.

The course numbering system is as follows:

1. Courses numbered below 100 carry service credit only, not college credit, and are usually not transferrable to other colleges.

2. Courses numbered above 100 are college credit courses; however, not all such courses are applicable to baccalaureate degree programs. (See Program of Study Section.)

3. Courses numbered above 200 are intended chiefly for sophomores but may be elected by freshmen in some cases.

4. The 290-299 courses designate specific projects rather than specific courses.

291 – Independent Study-Special study on an independent basis.

292 – Travel – Foreign and Domestic

293 – Special Projects or Topics – Offered as a regular class to more than one student.

294 – Seminar – Offered as a regular class to more than one student.

(Numbers 293 and 294 appear on the schedule of classes for a given semester.)

295 through 299 are assigned to a given course as the need arises.

Those courses which have definite prerequisites are so indicated, otherwise there is no prerequisite.

The first number in parentheses following the course description indicates the number of lecture hours per week, and the second number indicates the number of laboratory hours per week.

Most of the courses listed will be offered during a complete academic year. A schedule of classes is issued in March for the following Spring and Fall semesters, and in October for the following Winter semester.

If the student needs additional information regarding courses or transfer credit he should consult his adviser or the Student Services Office.

Subject matter groupings under each division are arranged in alphabetical order as follows:

Business Division

- Accounting
- Business Machines
- Cooperative Education
- Data Processing
- Distributive Education
- General Business
- Real Estate
- Secretarial Science

English Division

Health, Physical Education and Recreation Division

- Activity Courses
- Theory Courses

Humanities Division

- Art
- Languages
- French
- German
- Russian
- Spanish
- Library Science
- Music
- Philosophy
- Radio-Television
- Speech

Mathematics Division

Nursing Division

Allied Health Programs
Dental Assistant
Health Science
Radiologic Technology

Science Division
Agriculture
Aviation
Basic Science
Biology
Chemical Technology
Chemistry
Fire Protection
Geography
Geology
Physical Science
Physics

Social Science Division
Economics
History
Law Enforcement
Political Science
Psychology
Sociology

Technical Division
Architecture
Automotive
Drafting
Electronics
Industrial Supervision
Mechanical
Residential Construction

BUSINESS DIVISION
Division Chairman — Dale F. Keyser, Associate Professor

Professor
Aline A. Lynch

Associate Professor	Assistant Professor	Instructor
Richard J. Ferrando	James A. Christensen	Robert M. Boeke
Floyd A. Feusse	Peggy E. Hammontree	Donald J. Muller
Frances B. Gainey	William R. Hieber	Richard F. Niemann
Robert N. Lees	Carol A. Jacobs	Betty J. Roberts
Marjorie M. Leeson	Isaac W. J. Keim, III	Rhosan D. Stryker
Dennis E. McNeal	Donna M. McCloy	Iva W. Ware
	Lois W. Sears	
	Mary E. Smith	

ACCOUNTING

Acct 111 Introductory Accounting 4 Sem Hrs
Introduces concepts of accounting as related to the double entry process of recording data in various journals, posting to general and special ledgers, preparation of worksheet and periodic financial statements. Elements studied are assets, liabilities, proprietorship, income, expense, depreciation. Accruals, deferrals, and adjustments are also covered. Completion of a practice set is required. (4-0)

Acct 112 Introductory Accounting 4 Sem Hrs
Prerequisite: Accounting 111. Includes the voucher system; payroll, partnership formation and procedures; corporate formation, records, surplus, dividends, stocks and bonds. (4-0)

Acct 113 Social Security and Payroll Accounting 2 Sem Hrs
Prerequisite: Accounting 111 or Accounting 211. Considers Federal Social Security laws and State Unemployment Compensation laws as applied to business. Automated payroll machines and systems are introduced. A brief survey of other Michigan tax laws is included. (2-0)

Acct 211 Principles of Accounting 4 Sem Hrs
Prerequisite: None. Introduces the functions of accounting, data accumulation, the concept of the accounting cycle, and the basic procedures for recording business data. A study of the accrual concept and related documents, formation of a corporation, the single proprietorship and partnership, the measurement of earnings, and the control of data. (4-1)

Acct 212 Principles of Accounting	4 Sem Hrs	
Prerequisite: Accounting 211. A study of earnings determination, assets and liability valuation, and internal accounting for management. Topics studied are: cash and cash control, receivables and sales revenue, investments, inventories and cost of goods sold, plant and intangible assets, corporation bonds, appraising and controlling departmental operations, basic cost concepts and systems for accumulating costs, incremental analysis, capital expenditure decisions, budgeting, funds flow, cash flow, subsidiary ledgers, voucher system, single proprietorships and partnerships. (4-1)		
Acct 213 Cost Accounting	3 Sem Hrs	
Prerequisite: Accounting 112 or Accounting 212. Relates principles and methods of handling materials, labor costs, and manufacturing expenses to the formulation of reports to management. Includes job order, process, and standard direct costing procedures. A job order practice set is completed. (3-0)		
Acct 214 Advanced Cost Accounting	3 Sem Hrs	
Prerequisite: Accounting 213. Emphasis on the role of cost and profit data as applied to the decisions of management. Subjects treated: Estimated cost, budgetary control and flexible budgets, analysis and control of distribution costs, cost-profit-volume analysis, differential cost analysis, return on capital employed, and pricing policies. (3-0)		
Note: Senior colleges may prefer to have their accounting majors take this advanced course at their institutions.		
Acct 215 Federal Tax Accounting	3 Sem Hrs	
Prerequisite: Accounting 112 or Accounting 212. Studies the Federal Income Tax law. Emphasis is placed on the application to the individual and the single proprietorship business, although some references are made to the corporation. The individual tax return is prepared. (3-0)		
Acct 217 Auditing Theory and Procedure	3 Sem Hrs	
Prerequisite: Accounting 112 or Accounting 212. Surveys principles and procedures of auditing; attention is given to auditing concepts, professional ethics and responsibility, the audit program, auditing procedures, working papers, and simple audit reports. Completion of an integrated case study which involves the preparation of the working papers and the report for a complete audit is required. (3-0)		
Acct 223 Intermediate Accounting	4 Sem Hrs	
Prerequisite: Accounting 212 or permission of Division Head. Added development of accounting knowledge previously gained in introductory courses. Scope of material covered: correction of prior year's earnings, stock options and splits, basic accounting assumptions, internal control, limits on credit, inventory adjustments, and matters relevant to investments in stock. (4-0)		
Acct 224 Intermediate Accounting	4 Sem Hrs	
Prerequisite: Accounting 223. Material coverage relates to appraisal methods for fixed and intangible assets, operating reserves, ratio analysis, operations analysis, working capital and cash flow statements, quasi-reorganization, tax allocation, and the impact of inflation on financial statements. (4-0)		
Acct 290-299 Special Problems in Accounting		
(See page 51)		
BUSINESS MACHINES		
Bus Mach 170 Beginning Typewriting	1 Sem Hr	
A 7½-week course including mastery of the typewriter keyboard — letters, numbers, symbols—by the touch system. Provides a brief introduction to tabulations, manuscripts and business letters. (2-2)		
Bus Mach 171 Beginning Typewriting	1 Sem Hr	
A course in beginning typewriting for students who already know the keyboard. This course will include development of speed and skill in producing business letters, manuscripts, outlines, tabulation, word division and centering skills. (Class meets for 7½ weeks.) (2-2)		
Bus Mach 172 Intermediate Typewriting	2 Sem Hrs	
Prerequisite: Business Machines 171 or its equivalent. Vocational training for business. May be taken for personal use. Development of accuracy and speed in typing business and personal letters, rough drafts, manuscripts, outlines, tabulations, and simple business forms. Introduction to duplicating processes. (2-2)		
Bus Mach 175 Machine Calculation	2 Sem Hrs	
Prerequisite: Proficiency in arithmetic. Deals with the basic operations of calculators, electronic calculators, printing calculators, key-driven calculators, ten-key and full-key adding-listing machines. (2-1)		
Bus Mach 176 Machine Calculation	2 Sem Hrs	
Prerequisite: Business Machines 175. A continuation of Business Machines 175, with emphasis placed on vocational efficiency and speed of manipulation on the various calculators and printing calculators. (2-1)		
Bus Mach 273 Advanced Typewriting	2 Sem Hrs	
Prerequisite: Business Machines 172 or its equivalent. Vocational training is stressed. Emphasis is placed on developing excellence and refinement of vocational skills and office production jobs. Provides practice in typing communications used in differing professional and business fields. (2-2)		

Bus Mach 274 Voice Transcription and Copying Machine Procedures 2 Sem Hrs
Prerequisite: Business Machines 172 or its equivalent. Provides: (1) Training in the skillful operation of voice transcription machines such as Dictaphone and IBM Executary; (2) Survey of copying machines, with practice in the preparation of materials, and operation of several commonly used machines. (2-2)

Bus Mach 290-299 Special Problems in Business Machines
(See page 51)

COOPERATIVE EDUCATION

Coop Ed 121 Cooperative Office Education 3 Sem Hrs
Prerequisite: Employable skill and consent of coordinator. Places the student in a school or business office for supervised, on-the-job experience. Evaluations are made by the employer and the coordinator. Class meets with the coordinator one hour each week. Term paper and/or project reports required on each student. (1-15)

Coop Ed 122 Cooperative Office Education 3 Sem Hrs
Prerequisite: Cooperative Education 121. A continuation of Cooperative Education 121, with additional responsibilities at the work station. Term paper or project reports required of each student. (1-15)

Coop Ed 125 Cooperative Distributive Education 3 Sem Hrs
Prerequisite: Employable skill and consent of coordinator. Places the student in a distributive occupation for supervised, on-the-job experience. Evaluations are made by the employer and the coordinator. Class meets with the coordinator one hour each week. Term paper and/or project reports required of each student. (1-15)

Coop Ed 126 Cooperative Distributive Education 3 Sem Hrs
Prerequisite: Cooperative Education 125. A continuation of Cooperative Education 125, with additional responsibilities at the work station. Term paper or project reports required of each student. (1-15)

Coop Ed 221 Cooperative Office Education 3 Sem Hrs
Prerequisite: Cooperative Education 122. A continuation of Cooperative Education 122, with the introduction of new duties or responsibilities; additional research is done. (1-15)

Coop Ed 222 Cooperative Office Education 3 Sem Hrs
Prerequisite: Cooperative Education 221. A continuation of Cooperative Education 221, with added duties or responsibilities; further research. (1-15)

Coop Ed 225 Cooperative Distributive Education 3 Sem Hrs
Prerequisite: Cooperative Education 126. A continuation of Cooperative Education 126, with the introduction of new duties or responsibilities; more research is done. (1-15)

Coop Ed 226 Cooperative Distributive Education 3 Sem Hrs
Prerequisite: Cooperative Education 225. Continuation of Cooperative Education 225, with added duties or responsibilities; further research. (1-15)

Coop Ed 290-299 Special Problems in Cooperative Education
(See page 51)

DATA PROCESSING

Data Proc 179 Key Punching and Verifying 2 Sem Hrs
Prerequisite: Business Machines 171, or equivalent. Builds skill in key punching and verifying the punch card. Students who successfully complete the course will have sufficient knowledge to do productive work on the key punch and verifier. A background in terminology and use of the punched card is provided. (2-2)

Data Proc 133 Introduction 3 Sem Hrs
Prerequisite: None. Provides a basic orientation to the field of computers and their usage. Scope of course includes the punch card, design and uses; tabulating equipment, functions and applications; computer, brief history, input and output devices, study of the 1620 computer, SPS, FORTRAN, and applications. (3-1)

Data Proc 134 Data Processing Machine Operation 3 Sem Hrs
Prerequisite: Data Processing 133. The major emphasis will be on console operation procedures for the 360-40 computer and the operation of unit record equipment. The student will wire control panels for the collator, interpreter, reproducer, and accounting machine. Since procedures and data flow will be stressed, additional job applications will be run by the students which emphasize utilization of manuals, job documentation, and control. (3-1)

Data Proc 235 Data Processing Applications 3 Sem Hrs
Prerequisite: Data Processing 133. A study of data processing systems and procedures involving analysis of various existing data processing applications in business and industry. Includes a study of integrated or total management information and data processing systems. Emphasis is given to developing detailed procedures in various areas of management. The course is designed to study the three phases necessary: Analysis or present information flow; System specification and equipment; Implementation and documentation of the system. (3-0)

Data Proc 239 IBM System/360 Basic Assembler Language 3 Sem Hrs
Prerequisite: Data Processing 133. The early portion of the class will deal with the primary machine instructions, their usage and basic rules. The major portion of the course will concern itself with programming, programming techniques, writing and testing typical BAL applications, correlation with other 360 languages and how they all generate BAL instructions. (3-0)

Data Proc 243 Report Program Generator Programming 3 Sem Hrs
Prerequisite: Data Processing 133. File, input, calculation and output specifications statements for reporting and routine accounting applications will be covered. Programs will be written, compiled, and tested. (3-0)

Data Proc 245 COBOL Programming 3 Sem Hrs
Prerequisite: Data Processing 133. The early part of the course will include the advantages of COBOL, its strength, potential applications, and basic rules. The major portion of the course will concern itself with programming, compiling, and testing typical applications. (3-0)

Data Proc 246 PL/I Programming 3 Sem Hrs
Prerequisite: Data Processing 133. The early part of the course will include the advantages of PL/I, potential applications and basic rules. The major portion of the course will concern itself with programming, compiling, and testing typical applications. (3-0)

Data Proc 250 Data Processing Management 3 Sem Hrs
Prerequisite: None. Course covers contemporary problems in data processing management. Scope of the course will include the selection and training of data processing personnel, areas of responsibility in data processing, program controls, selection of services and equipment, and standards of documentation. (3-0)

Data Proc 251 Systems Analysis and Design 5 Sem Hrs
Prerequisite: Data Processing 133. It is also essential that the student has a good understanding of both accounting and programming. Suggested: Data Processing 250. Course covers the fundamental concepts of designing a system to effectively utilize data and to facilitate the functions of management. A case study will be used to illustrate the design, implementation, and documentation of a system. (5-0)

Data Proc 290-299 Special Problems in Data Processing
(See page 51)

DISTRIBUTIVE EDUCATION

Dist Ed 141 Transportation and Traffic Management 3 Sem Hrs
Prerequisite: None. Provides information, practice, and techniques necessary to qualify for position on the Traffic Management Divisions of larger industry and carrier companies. Covers history of American transportation systems, developments leading to Federal regulation of carriers other than railroad, classification of freight rates and tariffs, shipping documents, and their application in freight claims. (3-0)

Dist Ed 142 Transportation and Traffic Management 3 Sem Hrs
Prerequisite: Distributive Education 141. Deals with tariff circulars, construction and filing of tariffs, freight rates and tariffs, terminal facilities and switching, demurrage, transit privileges, warehousing and distribution, materials handling and packaging. (3-0)

Dist Ed 143 Advertising 3 Sem Hrs
Prerequisite: General Business 153. Stresses the manifold goals of advertising and its role in a marketing communications program as needed by tomorrow's professional managers. An appreciation of the rationale and strategies behind advertising campaigns is presented. (3-0)

Dist Ed 145 Sales 3 Sem Hrs
Prerequisite: None. Brings the marketing concept into sales education. Information on psychology, sociology, economics, and communications is employed in a contemporary concept of salesmanship. (3-0)

Dist Ed 241 Transportation and Traffic Management 3 Sem Hrs
Prerequisite: One semester of Transportation and Traffic Management or consent of Division Chairman. Includes through routes and rates, milling in transit, technical tariff and rate interpretation, overcharges and undercharges, losses and damages, and a review of decisions of the Interstate Commerce Commission. (3-0)

Dist Ed 242 Transportation and Traffic Management 3 Sem Hrs
Prerequisite: Transportation and Traffic Management 241 or consent of Division Chairman. Includes evaluation of the Interstate Commerce Act, its interpretation and application, procedures and practice before the Interstate Commerce Commission, Statutory authority for awarding damages, and a review of the Interstate Commerce Commission. (3-0)

Dist Ed 243 Marketing 3 Sem Hrs
Prerequisite: General Business 153. Provides an understanding and interpretation of the marketing system and its importance in the economy and the place of the marketing function in business management. The marketing framework is established and a basic understanding of the processes, functions, and channels is presented. Role of the Government in marketing procedure is emphasized. (3-0)

Dist Ed 245 Principles of Management Prerequisite: General Business 153. Designed to train students in the analysis of management problems and the synthesis of solutions. Theories of management practices are discussed and fundamentals of administrative, executive, and staff management explained. Emphasis is placed on preparation of information required for decision making. (3-0)	3 Sem Hrs	Gen Bus 153 Introduction to Business Prerequisite: None. Clarifies the role of business in modern society. The significant relationships which exist between business and the social, political and economic environment are stressed. The inter-connection between business and other institutions in our environment is emphasized. (3-0)	3 Sem Hrs
Dist Ed 247 Retailing Prerequisite: General Business 153. Investigates methods used by retail businesses to plan the marketing of merchandise in relation to time, place, quantities, and price. The importance of advertising, sales promotion, layout and display, accounting procedures and controls, use of financial data and human resources is recognized. (3-0)	3 Sem Hrs	Gen Bus 157 Filing and Records Management Prerequisite: None. Emphasis is placed on practical application of the basic rules of filing in alphabetic, numeric, geographic, and subject filing systems. Includes also a study of the complete records cycle, procedures for operation and control of filing methods and records, selection of equipment and supplies, supervision of personnel, and an understanding and awareness of the increasingly important area of records management. (3-0)	3 Sem Hrs
Dist Ed 290-299 Special Problems in Distributive Education (See page 51)		Gen Bus 251 Business Law Prerequisite: None. Introduces the court system; a study of contracts, agency, employment, personal property, and bailments. (3-0)	3 Sem Hrs
Gen Bus 110 Business Computations Prerequisite: Math 91 if mathematics placement test score is unsatisfactory. Course covers many of the principles necessary to an understanding of the math of the business world. Includes various methods of computing interest and bank discounts; installment buying; F.I.C.A., Federal Income Taxes and other payroll deductions; markup, cost and selling prices; various wage payment systems; depreciation; sales and property taxes, insurance; measures of central tendency. (3-0)	3 Sem Hrs	Gen Bus 252 Business Law Prerequisite: General Business 251 or consent of the Chairman of the Business Division. A study of corporations, real property, negotiable instruments, sales, security devices, and trusts and estates. (3-0)	3 Sem Hrs
Gen Bus 151 Business Communications Prerequisite: Business Machines 171 or its equivalent, or Business Machines 171 taken concurrently. Teaches principles of effective oral and written communications. Practice provided in letter writing, preparation of management message, compilation and completion of job applications, communications by telephone and wire, techniques of dictating, courteous interchange of thought. (3-0)	3 Sem Hrs	Gen Bus 255 Office Administration Prerequisites: General Business 151 and General Business 153. Presents the principles of office supervision together with concepts of planning, organizing, motivating, and controlling. Recognition is given to the role of human relations in effecting efficient harmonious activities. (3-0)	3 Sem Hrs
Gen Bus 152 Business Communications Prerequisite: General Business 151. Studies the influence of oral and written communication upon human relations in business, and applies effective methods that may be used. Emphasis placed on tone, form, accuracy, clarity, appeal and psychology in writing letters and reports. Designed also for increasing the business vocabulary, and understanding current business literature. (3-0)	3 Sem Hrs	Gen Bus 290-299 Special Problems in General Business (See page 51)	

GENERAL BUSINESS

Gen Bus 110 Business Computations
Prerequisite: Math 91 if mathematics placement test score is unsatisfactory. Course covers many of the principles necessary to an understanding of the math of the business world. Includes various methods of computing interest and bank discounts; installment buying; F.I.C.A., Federal Income Taxes and other payroll deductions; markup, cost and selling prices; various wage payment systems; depreciation; sales and property taxes, insurance; measures of central tendency. (3-0)

Gen Bus 151 Business Communications
Prerequisite: Business Machines 171 or its equivalent, or Business Machines 171 taken concurrently. Teaches principles of effective oral and written communications. Practice provided in letter writing, preparation of management message, compilation and completion of job applications, communications by telephone and wire, techniques of dictating, courteous interchange of thought. (3-0)

Gen Bus 152 Business Communications
Prerequisite: General Business 151. Studies the influence of oral and written communication upon human relations in business, and applies effective methods that may be used. Emphasis placed on tone, form, accuracy, clarity, appeal and psychology in writing letters and reports. Designed also for increasing the business vocabulary, and understanding current business literature. (3-0)

REAL ESTATE

RE 181 Real Estate Principles I

3 Sem Hrs

Prerequisite: None. This fundamental course is planned to provide a general overview of real estate to those persons contemplating entering the business. Content will include scope and organization, economics, legal aspects, the nature of real property, ownership, and property rights. Approved for G.R.I. I. (3-0)

RE 182 Real Estate Principles II

3 Sem Hrs

Prerequisite: Real Estate 181 or field experience. This course is a continuation of Real Estate 181 designed as a general knowledge course for those entering the profession, as well as those presently in the business who do not have formal training in real estate. Considers financing, brokerage, future trends, and property evaluation. Approved for G.R.I. II. (3-0)

RE 183 Real Estate Procedure

3 Sem Hrs

Prerequisites: Real Estate 181 and Real Estate 182 (Real Estate 182 and Real Estate 183 may be taken concurrently). The student will study day-to-day operations in real estate roles and brokerage, including listing, prospecting, advertising, closing, sales techniques, escrow and ethics. This course covers much of the material required in the broker's exam. (3-0)

RE 281 Real Estate and Government

3 Sem Hrs

Prerequisites: Real Estate 181 and Real Estate 182. The effect of government regulations upon real estate will be covered in detail, as well as open housing, urban renewal, pollution, and zoning. The course will also cover real estate associations such as the National Association of Real Estate Boards, National and Multiple Listings Services, National Association of Home Builders, and others. (3-0)

RE 282 Real Estate Finance

3 Sem Hrs

Prerequisites: Real Estate 181 and Real Estate 182. Regulations and procedures for financing real estate; types of lenders; methods of qualifying for loans; uses of mortgages, trust deeds, leases, mathematics of real estate finance and financial analysis of real properties. (3-0)

RE 283 Real Estate Appraisal

3 Sem Hrs

Prerequisites: Real Estate 181 and Real Estate 182. Residential appraisal, principles of real estate valuations, cost market data, summation and sales analysis, methods of appraising, estimating, current trends and techniques, single and multiple family dwellings, vacant land. Actual field experience is included. (3-0)

RE 290-299 Special Problems in Real Estate

(See page 51)

SECRETARIAL SCIENCE

Sec Sci 161 Beginning Shorthand

4 Sem Hrs

Prerequisite: None. Theory of Gregg Shorthand, Diamond Jubilee Method. Includes development of skill in reading, intensive study of brief forms, writing of practiced and new materials, pre-transcription training. Laboratory assignments required. (4-1)

Sec Sci 162 Intermediate Shorthand

4 Sem Hrs

Prerequisites: Secretarial Science 161 and Business Machines 171, or equivalents. Must be accompanied by Business Machines 172 or 273. Designed to increase speed in taking new-matter dictation. Builds transcription skills, includes English, grammar review, vocabulary study, and spelling. Laboratory assignments required. (4-1)

Sec Sci 165 Orientation to Medical Office Work

1 Sem Hr

Prerequisite: None. Basic information about medical assistant opportunities and responsibilities. Medical terminology is introduced. (1-0)

Sec Sci 166 Orientation to Community Health Services

1 Sem Hr

Prerequisite: None. Introduction to the public and private agencies closely allied with work of the medical assistant. Study of medical terminology continued. (1-0)

Sec Sci 181 Beginning Stenographic Machine Shorthand

4 Sem Hrs

Prerequisite: Business Machines 171 or its equivalent or consent of Division Chairman. Theory is presented through a system of phonetic writing employing the Stenograph machine, which imprints in English letters. Dictation given on practiced and new materials. The student should be able to take accurate notes at the rate of 60 to 80 words per minute. Transcription is introduced. (4-1) Note: Additional stenographic machine shorthand courses will be added as needed.

Sec Sci 261 Secretarial Practices

3 Sem Hrs

Prerequisites: General Business 151 and Business Machines 172, or consent of Division Chairman. Broadens the secretary's concept of management in business. Attention given to developing an acceptable secretarial personality. Augments knowledge and skill in working with people, and in handling information in the areas of correspondence and reports, communications, calculating, mailing, filing. Related work assignments required. (3-0)

Sec Sci 263 Dictation and Transcription

4 Sem Hrs

Prerequisite: Secretarial Science 162. Emphasizes speed and accuracy in transcribing mailable letters. Extends the development of writing speeds on new-matter dictation. Introduces special techniques in handling office dictation. Laboratory assignments required. (4-0)

Sec Sci 264 Speed Building and Specialized Shorthand 3 Sem Hrs
Prerequisite: Secretarial Science 263 or consent of Division Chairman. Students are expected to attain high speed in taking and transcribing dictation. Offers specialized vocabularies and materials in the chemical, legal, medical, reporting, and technical fields, according to career interest of the student. Laboratory assignments required. (3-0)

Sec Sci 265 Nursing Arts 3 Sem Hrs
Prerequisite: Secretarial Science 165 and 166, and one course in Biology, or consent of Chairman of the Business Division. Designed to provide knowledge and skills which will enable the medical assistant to work cooperatively and efficiently with the doctor, members of staff, patients; to train the student in simpler techniques of nursing so that she may assist the doctor; to provide an appreciation of medical care so that she may interpret accurately to the public and health professions in her community. (3-1)

Sec Sci 266 Orientation to the Medical Laboratory 3 Sem Hrs
Prerequisite: Secretarial Science 265, or consent of Division Chairman. Lectures, demonstrations, and laboratory experience to familiarize the student with laboratory procedures commonly used in the medical office. Emphasis on terminology used in reporting findings; mixing and standardizing common solutions and reagents. An acquaintanceship with micro-biology and bacteriology; qualitative urinalysis, hematology, microscopical examination of smears and sediments, EMR and EKG determinants. (3-1)

Sec Sci 290-299 Special Problems in Secretarial Science
(See page 51)

ENGLISH DIVISION

Division Chairman — Maurice S. Alberda, Associate Professor

Associate Professor	Assistant Professor	Instructor
Brendan R. Cahill	Geraldine R. Anderson	Michael T. Blair
Pauline K. Drumm	John F. Augustine	Michael A. DeCarbo
Genevra H. Grossman	Dana E. Blackwell	Mitchell H. Jarosz
Otto E. Henning	Gerald V. Ellison	Antonio Marquez
Dr. Leticia S. Molter	Joan B. Gronewold	Suzanne McConnell
	Gerald L. Hall	Charles R. Radey
	Donald B. Halog	Elizabeth Redington
	William C. Harman	Gary B. Roelofs
	Martha J. Keil	Leroy J. Spiller
	Stephen Marcus	
	James M. McGinty	
	Fred W. Renker, Jr.	
	Charlotte W. Seiler	
	Alice B. Ziegler	

Eng 66 Reading Development 3 Hrs Service Credit
Prerequisite: None. Development of general reading ability. Emphasis on flexibility of rate and comprehension of content materials. Each student will receive individual attention for specific reading or study difficulties. (3-0)

Eng 72 Improvement English 4 Hrs Service Credit
Prerequisite: None. Fundamentals of written composition are practiced. Content and organization of themes, vocabulary, spelling, sentence structure and paragraphing are included with orientation to the needs of the student. (4-0)

Eng 81 English as a Second Language 4 Hrs Service Credit
Prerequisite: None. A practical study of English to develop the reading, writing, understanding, and speaking competency of foreign speaking students. The course serves as preparation for English 111 and English 112. (4-0)

Eng 101 Contemporary English 5 Sem Hrs
Prerequisite: None. Instruction and experience in the skills of reading, writing, and oral communication with emphasis on practical use. Credit toward certain specified certificate programs. (5-0)

Eng 110 Writing Techniques 2 Sem Hrs
Prerequisite: None. Offered in conjunction with specified sections of English 111. The course will provide special attention to particular problems and individual needs in written composition as determined in the coordinated English 111 section. The credit hours may be counted toward total hours required for graduation but not toward fulfilling the English Composition requirement for any Associate Degree curriculum. (2-0)

Eng 111 Freshman Composition	3 Sem Hrs	
Prerequisite: None. Development of competence in reading and writing with emphasis on various kinds of writing. (3-0)		
Eng 112 Freshman Composition	3 Sem Hrs	
Prerequisite: English 111. A continuation of English 111 with emphasis on reading literary selections as well as further practice in writing. (3-0).		
Eng 113 Technical Writing	3 Sem Hrs	
Prerequisite: English 111. Techniques for written presentation of technical material in formal and informal reports. The emphasis will be on general principles with specific applications in conjunction with technical courses or actual job experience. (3-0)		
Eng 115 Basic Journalism Skills	2 Sem Hrs	
Prerequisite: None. History and principles of journalism; introductory advertising, news gathering and reporting. Feature and editorial writing and the necessary skills needed in proof reading and editing are stressed. (2-0)		
Eng 116 News Reporting	2 Sem Hrs	
Prerequisite: None. Principles and practice of reporting for newspapers and other mass media. Study of history and ethics of journalism. (2-0)		
Eng 121 Reading Techniques	2 Sem Hrs	
To assist the average or better reader in developing reading skills, flexible reading rates, and increased comprehension while reading faster. Critical and analytical reading techniques, skimming, and scanning are developed. (2-0)		
Eng 211 Advanced Composition	3 Sem Hrs	
Prerequisite: English 112. Instruction and practice in expository and argumentative writings based on the reading of literary selections. (3-0)		
Eng 221 Introduction to Literature	3 Sem Hrs	
Prerequisite: English 112. Designed to increase the student's appreciation of literature. Emphasis will be placed on readings in the short story and poetry. (3-0)		
Eng 224 Popular Literature	3 Sem Hrs	
Prerequisite: English 112 or permission of instructor. An examination of a particular body of popular literature, organized by the selection of material either from the works of one author or one genre (e.g. Science Fiction, Black Humor, War Novel, etc.). Course content to be announced each semester prior to registration. (3-0)		
Eng 231 Modern Poetry	3 Sem Hrs	
Prerequisite: English 112. A study of the background, the developments, and the current state of modern poetry, with emphasis on poems by American and British authors. (3-0)		
Eng 241 Introduction to Mythology	3 Sem Hrs	
Prerequisite: English 112. A study of the myths of Greece, Rome, and the Levant as they have appeared in <i>The Iliad</i> , <i>The Odyssey</i> , <i>The Metamorphoses</i> , <i>The Aeneid</i> , and <i>The Old Testament</i> , with emphasis on their relationship to modern literature. (3-0)		
Eng 251 Children's Literature	3 Sem Hrs	
Prerequisites: English 112 and speech course. A survey of literature for children in the elementary grades, aimed at developing techniques for using books with children, story telling, and the criteria for book selection. (3-0)		
Eng 252 Creative Writing	3 Sem Hrs	
Prerequisite: English 112 and permission of the instructor. Through analysis of various forms of writing and frequent compositions, the student is encouraged to develop writing skills according to his own interests and abilities. (3-0)		
Eng 261 Dramatic Literature	3 Sem Hrs	
Prerequisite: English 112. Designed to develop appreciation of dramatic literature, this course is concerned with nature, purpose, and methods of drama. Reading of representative plays from Shakespeare to the present. (3-0)		
Eng 269 Native North American Literature	3 Sem Hrs	
Prerequisite: None. A broad survey of the literature of North American Indians. Poems, dramas, and tales of various Indian tribes will be examined, as well as biographies and autobiographies of important Indian leaders. Some reading in secondary sources will be required to facilitate an understanding of the culture which produced the literature. (3-0)		
Eng 271 American Literature	3 Sem Hrs	
Prerequisite: English 112. Major movements and themes in American literature as they appear in the works of important authors from the Puritan period to and including the Age of Romanticism are studied. (3-0)		
Eng 272 American Literature	3 Sem Hrs	
Prerequisite: English 112. A continuation of English 271. Study of major movements and themes in American Literature from Walt Whitman through the Age of Realism and New Directions. (3-0)		
Eng 274 Mexican-American Literature	3 Sem Hrs	
Prerequisite: English 112 or the permission of the instructor. The course would provide an introduction to Mexican-American Literature, a survey of novels, short stories, plays, poems, essays, and autobiographies written by contemporary Mexican-American authors. Course would also examine the Mexican-American as portrayed in American Literature by such authors as John Steinbeck, Willa Cather, and Katherine Anne Porter. (3-0)		

Eng 275 The Negro in American Literature

Prerequisite: English 112. Designed to develop understanding of the way black people have been portrayed in American literature. Student will read, discuss and write about both black and white writers with emphasis on modern authors such as DuBois, Hughes, Ellison and Baldwin. (3-0)

Eng 276 Contemporary American Fiction (1945 to the present)

Prerequisite: English 112. A study of trends, techniques, and themes in recent American fiction. The student will read, analyze, and criticize the works of such writers as Updike, Cheever, O'Connor, Baldwin, Ellison, Bellow, Salinger, Malamud, and Mailer. (3-0)

Eng 281 British Literature

Prerequisite: English 112. A survey of the major British authors and writings from Beowulf to the Romantic Revolt. The student will critically study such literary figures as Chaucer, Shakespeare, Milton, and their contemporaries. In addition, through several research papers, the student is expected to demonstrate a comprehension of the contemporaneous ideas expressed by these men and the literary forms evolved by them. (3-0)

Eng 282 British Literature

Prerequisite: English 112. This course continues the student's survey of major British authors from the Romantic Revolt to the present time. Included will be such literary figures as Wordsworth, Coleridge, Byron, Shelley, Keats, Browning, and Eliot. Once again, through critical research papers, the student will be expected to relate these authors with their times and their literary forms. (3-0)

Eng 290-299 Special Problems in English

(See page 51)

3 Sem Hrs

HEALTH, PHYSICAL EDUCATION AND RECREATION DIVISION

Division Chairman — Lynn V. Conway, Associate Professor

Associate Professor

Barry D. Campbell
Charlotte A. Denman
Crawford E. Kennedy
Elanore M. Thompson

Assistant Professor

Patricia A. O'Toole
Richard W. Prentice
Paul D. Radlinski
James S. Still

Instructor

Jean S. Treadway

ACTIVITY COURSES**PE 101 Physical Fitness**

1 Sem Hr
Fitness through the use of calisthenics and self-testing exercises. Physical Fitness tests will be given and individual improvement records kept. (0-2)

PE 102 Physical Conditioning Through Sports

1 Sem Hr
Conditioning through the use of selected sport activities. (0-2)

PE 110 Activities for the Elementary Program

1 Sem Hr
Graded materials for elementary physical education including low organized games, lead-up activities, rhythms, stunts and tumbling and self-testing activities. (2-0)

PE 111 Team Sports

1 Sem Hr
Coverage of two or more selected team sports in season selected from Physical Education 112 to Physical Education 118, inclusive. (0-2)

PE 112 Basketball

1 Sem Hr
Covers basic skills of passing, dribbling, shooting, and team play. Rules and strategy also included. (0-2)

PE 113 Field Hockey

1 Sem Hr
Rules, fundamental skills and team play in field hockey. (0-2)

PE 114 Soccer

1 Sem Hr
Basic skills in kicking, dribbling, heading, and positional play. Rules and strategy are included. (0-2)

PE 115 Softball

1 Sem Hr
Covers throwing, catching, batting, and base running, along with the rules of play. (0-2)

PE 118 Volleyball

1 Sem Hr
Basic skills of handling the ball, passing, setting, spiking, net-rebound play, and blocking. Rules and strategy are included. (0-2)

PE 122 Badminton	1 Sem Hr	
Techniques and use of the various shots, along with rules and strategy. (0-2)		
PE 123 Fencing	1 Sem Hr	
An introduction to foil fencing, its basic fundamentals, techniques, rules, and safety measures. (0-2)		
PE 125 Sports Judo	1 Sem Hr	
Introduction to the rules, skills, and courtesies in sports judo as well as the special conditioning required. (0-2)		
PE 126 Intermediate Sports Judo	1 Sem Hr	
Prerequisite: Physical Education 125 or permission of instructor. Continuing improvement of beginning techniques, additional throwing, groundwork, and combination throwing techniques taught. (0-2)		
PE 127 Tennis	1 Sem Hr	
An introduction to the basic strokes in tennis along with rules, strategy, and courtesies of the game. (0-2)		
PE 128 Wrestling	1 Sem Hr	
Covers special conditioning, take-downs, elementary holds, breaks, and plan as well as rules. (0-2)		
PE 132 Archery	1 Sem Hr	
Introduction to the basic skills in shooting, in target and field archery. (0-2)		
PE 133 Bowling	1 Sem Hr	
Fundamentals of starting stance, approach, and delivery. The use of both spot and pin bowling, courtesies, rules and method of scoring. Special student rates on alley fees. (0-2)		
PE 134 Cross Country	1 Sem Hr	
Techniques and conditioning for competitive distance running. Permission of instructor is required. (0-2)		
PE 135 Golf	1 Sem Hr	
Fundamentals in the use of woods, irons, and putter along with the rules and courtesies of the game. (0-2)		
PE 136 Gymnastics	1 Sem Hr	
Emphasis is placed on the fundamental skills of tumbling and apparatus work. (0-2)		
PE 138 Track and Field	1 Sem Hr	
Practice in various skills of running, hurling, jumping, vaulting, and weights. (0-2)		
PE 139 Weight Training	1 Sem Hr	
A systematic program of bodily development through repetitive weight training. (0-2)		
PE 141 Folk and Square Dancing	1 Sem Hr	
A course designed to introduce folk and square dancing of many countries. (0-2)		
PE 142 Modern Dancing	1 Sem Hr	
A course designed to teach the fundamentals of body movement and simple choreography. (0-2)		
PE 143 Social Dancing	1 Sem Hr	
This course involves basic dance steps of the Fox Trot, Waltz, Swing, Cha Cha, Rhumba, Samba, Tango. (0-2)		
PE 151 Beginning Swimming	1 Sem Hr.	
A "learn to swim" course for beginners. Safety measures in swimming are stressed. (0-2)		
PE 152 Intermediate Swimming	1 Sem Hr	
Prerequisite: Physical Education 151 or consent of instructor. Skills in swimming the crawl, side stroke, elementary back and breast stroke. Safety measures and elementary forms of rescue. (0-2)		
PE 153 Advanced Swimming	1 Sem Hr	
Prerequisite: Physical Education 152 or consent of instructor. Improvement of strokes learned in Physical Education 152, along with the back stroke and elementary diving. (0-2)		
PE 154 Senior Life Saving	1 Sem Hr	
Prerequisite: Consent of instructor. Instruction in American Red Cross Senior Life Saving leading toward its certificate. (0-2)		
PE 155 Water Safety Instructor	1 Sem Hr	
Prerequisite: A current Senior Life Saving Certificate and the consent of the instructor. Instructions in the American Red Cross Water Safety Instructor Course leading toward its certificate. (0-2)		
PE 156 Canoeing	1 Sem Hr	
Prerequisite: Ability to swim. Instruction in basic American Red Cross canoeing course. Involves one-day trips to nearby lakes and rivers. Usually six sessions of five hours each. Reduced student fees for canoe rentals. (0-2)		
PE 160 Beginning Skiing	1 Sem Hr	
Emphasis placed on the fundamental skills. The student will be taught snowplow, snowplow turn, traversing, and stem turn. (0-2)		

PE 161 Intermediate Skiing	1 Sem Hr	
Prerequisite: None. Student will begin the transitions from steered turn to sliding turn. Side slipping, uphill christie and stem christie will be taught. (0-2)		2 Sem Hrs
PE 162 Advanced Skiing	1 Sem Hr	
Prerequisite: None. Student will learn finer points of parallel skiing. Parallel christie, parallel with check, and short swing will be taught. (0-2)		2 Sem Hrs
PE 163 Ski Racing	1 Sem Hr	
Basic fundamentals of racing slalom, giant slalom, and down-hill will be covered. (0-2)		2 Sem Hrs
PE 242 Intermediate Modern Dance	1 Sem Hr	
Prerequisite: Physical Education 142 or permission of instructor. Activities designed to improve strength, flexibility, rhythmic and spatial awareness, coordination, and locomotor movements. Approximately one-half of the course is devoted to elements of choreography and student composition. (0-2)		3 Sem Hrs
PE 243 Intermediate Social Dance	1 Sem Hr	
Prerequisite: Physical Education 143 or permission of instructor. Covers intermediate level steps in the Fox Trot, Waltz, Swing, Cha Cha, Rhumba, Samba, and Tango, and introduces the Mambo. (0-2)		3 Sem Hrs
THEORY COURSES		
PE 161 Introduction to Physical Education	2 Sem Hrs	
A study of the profession of physical education, its background, basic principles, relationships to growth and mental health, and vocational opportunities. (2-0)		2 Sem Hrs
PE 162 Intramurals	2 Sem Hrs	
Prerequisite: Physical Education 161 or permission of instructor. A study of the finances, facility utilization, organization and awards as they pertain to intramural programs is emphasized. (2-2)		2 Sem Hrs
PE 163 Officiating of Men's Sports	2 Sem Hrs	
This course will cover the mechanics and rules governing the officiating of football and basketball. Open to male students. Students will have an opportunity to gain practical experience. (2-0)		2 Sem Hrs
PE 164 Athletic Training	2 Sem Hrs	
Prerequisite: None. A course designed to provide the student with experiences and insight into the prevention, immediate treatment, and rehabilitation of injuries commonly sustained by participants in athletics. (2-1)		2 Sem Hrs
HE 165 First Aid and Safety		2 Sem Hrs
Study and practice in first aid treatment. Stress laid on prevention and safety measures. Student will pursue the standard and advanced first aid courses of the American Red Cross and will receive certificates upon successful completion of the course. (2-3)		
PE 166 Physical Education in Elementary Schools	2 Sem Hrs	
This course deals with the principles, methods, and materials of teaching physical education in the elementary schools. (2-0)		
RE 167 Recreation Leadership	3 Sem Hrs	
A study of the techniques, methods, and materials for leadership in directing various recreational program activities in the areas of low organized games, social events, simple arts and crafts, dramatics, dance calling, and individual sports. (3-0)		
HE 171 Health Education	3 Sem Hrs	
Prerequisite: None. Foundation health science course, with special emphasis on personal, family, and community health. (3-0)		
PE 180 Theory and Practice of Field Hockey for Women	2 Sem Hrs	
The techniques, team play, and rules of field hockey. (2-0)		
PE 182 Theory and Practice of Basketball for Women	2 Sem Hrs	
The techniques, team play, and rules of basketball. (2-0)		
PE 184 Theory and Practice of Volleyball for Women	2 Sem Hrs	
Analysis and practice of techniques, team play, and rules of volleyball. (2-0)		
PE 186 Theory and Practice of Beginning Gymnastics for Women	2 Sem Hrs	
Techniques and procedures for teaching beginning stunts, tumbling, and apparatus activities for the elementary and secondary program. (2-0)		
HE 211 Basic Anatomy	3 Sem Hrs	
Prerequisite: None. Open to second semester freshmen and sophomores. An introductory course in the structure and function of the human body with special emphasis on skeletal, nervous, circulatory, and respiratory systems. Serves as a foundation course for health and physical education majors. (3-0)		
PE 214 Officiating of Women's Sports for Women	2 Sem Hrs	
Prerequisites: Physical Education 180, 182, and 184 or with permission of instructor. Rules and techniques of officiating field sports, basketball, and volleyball. (2-0)		
HE 215 First Aid Instructors	2 Sem Hrs	
Prerequisites: American Red Cross Advance Certificate, or permission of instructor. Methods of teaching first aid to the various age and ability levels. (2-0)		

PE 216 Theory and Practice of Folk and Square Dance 2 Sem Hrs
Prerequisite: None. Analysis and practice of skills and techniques of representative folk and square dances. (2-0)

PE 218 Theory and Practice of Fundamental Movement for Women 2 Sem Hrs
Individual analysis of basic motor skills which are essential for efficient movement and physical fitness. (2-0)

PE 220 Theory and Practice of Modern Dance 2 Sem Hrs
Theory and practice of basic techniques and movement patterns for modern dance. (2-0)

PE 222 Advanced Techniques and Coaching of Field Hockey 2 Sem Hrs
Prerequisite: Physical Education 180. Advanced skills and strategy of field hockey, selection and preparation of a team. (2-0)

PE 236 Women's Advanced Gymnastics 1 Sem Hr
Development of intermediate and advanced level skills in women's gymnastics, with emphasis on teaching techniques and appropriate safety procedures. (0-2)

PE 247 Advanced Techniques and Coaching of Field Hockey 2 Sem Hrs
Prerequisite: Physical Education 180. Advanced skills and strategy of field hockey, selection and preparation of a team. (2-0)

HE, PE, RE 290-299 Special Problems in Health, Physical Education and Recreation
(See page 51)

HUMANITIES DIVISION

Division Chairman — Gene R. Duckworth, Associate Professor

Associate Professor	Assistant Professor	Instructor
Charles A. Breed	Richard C. Esckilsen	Larry D. Butcher
Loren E. Cady	Sarah R. Gustin	Betty A. Holzschu
Patricia C. Eggleston	James F. Hopfensperger	Valerie J. Hullum
Olive L. Lagden	Don Th. Jaeger	John W. McCormick
James A. Leffew	Richard A. McGaw	Raymond Roberts
Dr. Louis M. Sanker	Murlene E. McKinnon	
Andrejs G. Straumanis	Robert M. Mee	
	Russell L. Thayer	

Television Staff

William Ballard, Director of Television and Station Manager
Ronald A. Black, Program Director
Thomas E. Haskell, Operations Manager
Katherine E. Serumgard, Producer-Director
M. Andersen Rapp, Producer-Director
Guy Serumgard, Producer-Director
David E. Knope, Producter-Director

ART

Art 105 Introduction to Art 2 Sem Hrs
Prerequisite: None. (Not open to art majors.) A studio and lecture course for the student desiring some practical experience with drawing, painting, and the basic procedures employed in artistic creation, as an aid to self-expression or for cultural reasons. (0-4)

Art 111 Basic Freehand Drawing 3 Sem Hrs
Prerequisite: None. A beginning course in drawing designed for all students interested in the fundamentals of visual form and analysis of structure. Representational treatment of simple objects, forms, and volumes in line, value, and texture with a variety of media. (0-6)

Art 112 Advanced Drawing 3 Sem Hrs
Prerequisite: Art 111. A continuation of Art 111 emphasizing composition and a further understanding of the elements of drawing in relation to individual expression. Problems involve a variety of media. (0-6)

Art 113 Art Education 3 Sem Hrs
Prerequisite: None. Introduction to art for prospective teachers. Develops the ability to stimulate the creative interests of children in art. Acquaints the student with a variety of methods and materials adjusted to various grade levels. (0-6)

Art 114 Art Education	3 Sem Hrs	
Prerequisite: Art 113. A continuation of Art 113. Additional investigation of the theories of art education and creative growth of children. (0-6)		
Art 115 Basic Design – Two Dimensional	3 Sem Hrs	
Prerequisite: None. Experimentation with the basic elements of design: line, form, space, value, textures, and color. A variety of media is used in developing a visual vocabulary and understanding of art elements and composition. (0-6)		
Art 116 Basic Design – Three Dimensional	3 Sem Hrs	
Prerequisite: Art 115. A continuation of Art 115 with a series of problems designed to explore the elements of design in spatial compositions using a variety of basic materials. (0-6)		
Art 151 Art History and Appreciation	3 Sem Hrs	
Prerequisite: None. Required of all first-year art majors. A survey of Western art from Prehistoric times to the Renaissance. Deals with major works and artists of the Prehistoric, Ancient, Classical and Medieval cultures. The emphasis is on the architecture and sculpture of these periods. (3-0)		
Art 152 Art History and Appreciation	3 Sem Hrs	
Prerequisite: None. Required of all first-year art majors. A continuation of Art 151. A survey of the history of Western art from the Renaissance through Baroque, Neo-classicism, Romanticism, Impressionism, Expressionism, and the various modern schools. The emphasis is on the painting of those periods. (3-0)		
Art 153 History of Architecture	2 Sem Hrs	
Prerequisite: None. The historical development of architecture as a major art form. This development is viewed in relation to man's knowledge of building techniques and available materials as affected by geographic, economic, political and religious influences. (2-0)		
Art 154 The Arts of Africa and the Afro-American	1 Sem Hr	
Prerequisite: None. A study of the visual arts of Africa and the Negro. Topics are: (1) the visual arts as they developed in Africa, (2) the influence of African art on the arts of Europe and America. (3) the arts of contemporary Afro-America. (1-0)		
Art 210 Figure Drawing	3 Sem Hrs	
Prerequisite: Art 111. A study of the essential aspects of life drawing such as gesture, mass, proportions, anatomy, and structure. Essentially for the art major. (0-6)		
Art 217 Painting	3 Sem Hrs	
Prerequisites: Art 111 and Art 115. Experimentation in oil and other media. Techniques composition, and color are explored in relation to object references, landscape, figure and non-objective work. (0-6)		
Art 218 Advanced Painting	3 Sem Hrs	
Prerequisite: Art 217. Still life, landscape, and non-objective problems in the various techniques of water color, tempera, and oil. Recommended for students interested in art as a hobby, as well as for art majors. (0-6)		
Art 221 Introduction to Commercial Art	3 Sem Hrs	
Prerequisite: Art 115. Instruction in lettering and rough layouts; introduction to typography layouts. Problems encountered in newspaper, magazine, direct mail, and other advertising forms. Laboratory, lecture, and field trips. (0-6)		
Art 222 Sculpture	3 Sem Hrs	
Prerequisite: Art 115 or Art 116 or permission of instructor. An Introduction to a variety of sculptural concepts and techniques utilizing a variety of media. (0-6)		
Art 231 Basic Ceramics	3 Sem Hrs	
Prerequisites: Art 115 and Art 116 or permission of instructor. Introductory study of clay, glazes and their application, and techniques of construction. (0-6)		
Art 280 Printmaking	3 Sem Hrs	
Prerequisites: Art 111 and Art 115. A study of the art of printmaking and its major techniques; with studio practice in a variety of printing methods. The techniques taught are basically commercial art techniques with commercial potential as well as being useful to major artists. (0-6)		
Art 290-299 Special Problems in Art		
(See page 51)		

LANGUAGES

FRENCH

Fr 111 Elementary French

4 Sem Hrs

Prerequisite: None. A beginning course presenting the basic structure of the French language with oral-aural drills for correct pronunciation and for understanding and using spoken French, dictation, reading and writing simple French, acquisition of a basic vocabulary. All students are required to do supplemental work in the language laboratory. (4-0)

Fr 112 Elementary French

4 Sem Hrs

Prerequisite: French 111 or one year of high school French. A continuation of French 111 with further development of oral-aural skills. Grammatical structure with practice in writing French, and reading of easy French for comprehension of the written language and increasing vocabulary required language laboratory assignments. (4-0)

Fr 211 Intermediate French

4 Sem Hrs

Prerequisite: French 112 or two years of high school French. Review and application of principles of French grammar by means of oral and written exercises and composition, pronunciation through aural and oral exercises and conversation, reading of French prose and outside reading to develop rapid reading ability at sight are stressed. Classes conducted as far as possible in French. (4-0)

Fr 212 Intermediate French

4 Sem Hrs

Prerequisite: French 211 or three years of high school French. A continuation of French 211, with somewhat more emphasis on oral skill and conversation. (4-0)

Fr 290-299 Special Problems in French

(See page 51)

GERMAN

Ger 111 Elementary German

4 Sem Hrs

Prerequisite: None. Acquisition of proper pronunciation, basic grammatical structures and vocabulary of modern spoken and written German by means of oral-aural practice, reading of simple texts, and written exercises. Language laboratory assignments required. (4-0)

Ger 112 Elementary German

4 Sem Hrs

Prerequisite: German 111 or one year of high school German. A continuation of German 111. (4-0)

Ger 211 Intermediate German

4 Sem Hrs

Prerequisite: German 112 or two years of high school German. Continued emphasis is placed on proper pronunciation habits and on application of basic grammatical structures of modern spoken and written German by means of oral-aural exercises, conversations, reading of German prose, and written exercises. As far as possible, this class is conducted in German. Language laboratory assignments required. (4-0)

Ger 212 Intermediate German

4 Sem Hrs

Prerequisite: German 211 or equivalent. A continuation of German 211 with emphasis on conversation and composition. Special attention given to those interested in technical German. (4-0)

Ger 290-299 Special Problems in German

(See page 51)

RUSSIAN

Russ 111 Elementary Russian

4 Sem Hrs

Prerequisite: None. Acquisition of proper pronunciation, basic grammatical structures and vocabulary of modern spoken and written Russian by means of oral-aural practice, reading of simple texts, and written exercises. Language laboratory assignments. (4-0)

Russ 112 Elementary Russian

4 Sem Hrs

Prerequisite: Russian 111 or one year of high school Russian. Continuation of Russian 111. (4-0)

Russ 211 Intermediate Russian

4 Sem Hrs

Prerequisite: Russian 112 or two years of high school Russian. Continued emphasis placed on proper pronunciation habits and on application of grammatical structures of modern spoken and written Russian by means of oral-aural exercises, conversations, reading of Russian prose, and written exercises. As far as possible this class is conducted in Russian. Language laboratory assignments. (4-0)

Russ 212 Intermediate Russian

4 Sem Hrs

Prerequisite: Russian 211 or its equivalent. Continuation of Russian 211 with more emphasis on conversation and composition. (4-0)

Russ 290-299 Special Problems in Russian

(See page 51)

SPANISH

Spa 111 Elementary Spanish

4 Sem Hrs
Prerequisite: None. Emphasis on conversational Spanish. Daily oral-aural practice with required language laboratory assignments. Grammatical constructions accompanied by drill exercises and easy composition. Simple readings concerning Latin American Countries. (4-0)

Spa 112 Elementary Spanish

4 Sem Hrs
Prerequisite: Spanish 111 or one year of high school Spanish. Continuation of Spanish 111. (4-0)

Spa 211 Intermediate Spanish

4 Sem Hrs
Prerequisite: Spanish 112 or two years of high school Spanish. Review and application of principles of grammar by means of oral and written reviews, practice in conversation, outside reading to develop ability to read rapidly at sight, and translation from English into Spanish. As far as possible this class is conducted in Spanish. (4-0)

Spa 212 Intermediate Spanish

4 Sem Hrs
Prerequisite: Spanish 211 or three years of high school Spanish. A continuation of Spanish 211 with further detailed review and application of the principles of grammar, reading of Spanish short stories, and practice in advanced conversation and composition. As far as possible this class is conducted in Spanish. (4-0)

Spa 290-299 Special Problems in Spanish

(See page 51)

LIBRARY SCIENCE

Lib Sci 281 Classification and Cataloging

3 Sem Hrs
Principles and practices of library classification and cataloging, with emphasis on Dewey Decimal Classification system. Lectures combined with laboratory practice. (3-0)

Lib Sci 282 Reference Books

3 Sem Hrs
Study of basic books most frequently used by reference librarians. Use of encyclopedias, dictionaries, atlases, and indexes is stressed. Lectures combined with laboratory practice. (3-0)

Lib Sci 290-299 Special Problems in Library Science

(See page 51)

MUSIC

Mus 101 Theory-Basic Musicianship

5 Sem Hrs
Prerequisite: None. However, basic musical knowledge recommended, i.e., keys, notation, rhythm, and clefs. Comprehensive course for potential music majors. Emphasis on aural theory, written theory, and keyboard harmony. (3-4)

Mus 102 Theory-Basic Musicianship

5 Sem Hrs
Prerequisite: Music 101. Continuation of written theory with drill in harmonic and melodic dictation. Sight-singing and keyboard harmony through harmonic dictation of four-part Bach Chorale and other appropriate styles. (3-4)

Mus 105 String Ensemble

1 Sem Hr
Prerequisite: Experience in high school orchestra or equivalent. May be elected for four semesters. (0-2)

Mus 111 Music Literature

3 Sem Hrs
Prerequisite: None. Acquaints the student with fundamentals of listening. Symphonic music is emphasized. (3-0)

Mus 112 Music Literature

3 Sem Hrs
Prerequisite: Music 111. Continued study of instrumental music (concertina small ensemble). Promotes an understanding of, and appreciation for, vocal forms (opera, art, song, large choral work, i.e., oratorios, masses). (3-0)

Mus 115 Wind Ensemble

1 Sem Hr
Prerequisite: Band experience in high school or the equivalent. May be elected for four semesters. (0-2)

Mus 121 Elements of Music

3 Sem Hrs
Prerequisite: None. Rudiments of music, including notation, clefs, keys, syllables, and rhythm. Teaching of songs. Elementary conducting technique. Planned to meet the basic musical needs of those who expect to teach in the elementary grades. (3-0)

Mus 130 Black Music

2 Sem Hrs
Prerequisite: None. Acquaints students with Black Music with the following course objectives:

To depict the historical and sociological conditions under which Black Music developed.
To place Black Music in its proper perspective within the field of music in America.
To relate Black Music as an expression of attitude among Blacks regarding their living conditions and experiences, as slaves and as "freemen" in relationship to the Black life style.
To trace the origin and development of Black Music through the spiritual, the blues, jazz, rock 'n roll, and the works of "serious" Black composers. (2-0)

Mus 141 Choir

Prerequisite: None. However, high school and/or church choir experience is recommended. Directed toward the study of representative choral music and public performances in college and community activities. May be elected for four semesters. (0-3)

Mus 201 Theory (Basic Musicianship)

3 Sem Hrs

Prerequisite: Music 102 or permission of the instructor. A continuation of part writing, keyboard harmony, aural theory (melodic and harmonic dictation), and sight-singing. Begins with material including secondary seventh chords and continues through chromatic harmony. Analysis of styles will be emphasized. Sophomore level theory for music majors and minors. (2-2)

Mus 202 Theory (Basic Musicianship)

3 Sem Hrs

Prerequisite: Music 201. A continuation of Music 201 emphasizing the analysis of styles and musical forms. Four part harmonic dictation and appropriate keyboard harmony study. (2-2)

Mus 211 Music History

3 Sem Hrs

Prerequisite: Music 111 or permission of instructor. An in-depth study of music of ancient times to the Seventeenth Century. Required for music majors. (3-0)

Mus 212 Music History

3 Sem Hrs

Prerequisite: Music 111 or 211 or permission of instructor. A continuation of Music 211 with a study of music from the Seventeenth Century to the present with emphasis on form and style. Required for music majors. (3-0)

Mus 290-299 Special Problems in Music

(See page 51)

- 1 Sem Hr

PHILOSOPHY**Phil 211 Introduction to Philosophy**

3 Sem Hrs

Prerequisite: Sophomore standing. Designed to acquaint the student with some of the fundamental questions that have confronted mankind and the way in which these questions have been dealt with by the most profound thinkers of the past and present. (3-0)

Phil 212 Reading in Elementary Philosophy

3 Sem Hrs

Prerequisite: Sophomore standing. Aims at direct reading of the earlier philosophers, especially Plato, Aristotle, Descartes. The historical approach to supplement the other method of theories-approach in philosophy. (3-0)

Phil 213 Introduction to Ethics

3 Sem Hrs

Prerequisite: Sophomore standing. Designed to inquire into the principles of moral philosophy and to study the many different theories of ethics included in the writings of the leading moral philosophers. (3-0)

Phil 214 Philosophy of Religion

3 Sem Hrs

Prerequisite: None. An inquiry into the meaning and relevance of evolving religious beliefs and symbols and an examination of methodological issues relating to problems of God, man and the universe. (3-0)

Phil 221 Logic

4 Sem Hrs

Prerequisite: Sophomore standing or second semester Freshman with minimum C+ average. Development of effective thinking through the study of classical logic. Methods of clear argumentation, definition, assessment of evidence, and a brief introduction to inductive logic and the scientific method. (4-0)

Phil 290-299 Special Problems in Philosophy

(See page 51)

RADIO-TELEVISION

RTV 149 Broadcast Laboratory

3 Sem Hrs

Prerequisite: None. This course is a basic introduction to all aspects of television and radio production. Emphasis will be placed on developing student proficiency and an understanding of audio control equipment, television camera operations, light and staging techniques, and the selection and integration of written and visual production elements. Three hours per week additional time will be required in operational laboratory experience under actual broadcast conditions. Time to be arranged with the instructor to fit each student's schedule. (3-0)

RTV 150 Radio and Television Writing

3 Sem Hrs

Prerequisite: None. This course is conceived as both a practical and theoretical presentation. Such areas as film narration, public service announcements, commercials, drama, and program continuity are the course's major areas of concern. (2-2)

RTV 153 Broadcast Performance

3 Sem Hrs

Prerequisite: None. In this course the broadcasting student explores, in depth, presentations before microphones and cameras. Dress, movement, make-up, lighting, and delivery are all carefully considered. All major performance situations are thoroughly examined: narrations, speeches, interviews, discussions, news-casts, commercials, and children's programs and demonstrations. (2-2)

RTV 154 Fundamentals of Studio Operations

3 Sem Hrs

Prerequisite: Radio-Television 149. This course is divided into three basic study units: type of equipment, operation of equipment, and responsibilities of studio personnel. Through actual production work, students learn the theory and practice of such specialty areas as television graphics, studio lighting, audio operation, and camera techniques. This is a television production course. Three hours per week additional time will be required in operational laboratory experience under actual broadcast conditions. Time to be arranged with the instructor to fit each student's schedule. (2-2)

RTV 156 Radio Broadcasting

3 Sem Hrs

Prerequisite: None. Radio-Television 156 is a specialized concentration in the area of the principles and techniques of producing, programming, and management. It stresses the new role radio broadcasting has come to play among mass media. (2-2)

RTV 157 Cinematography for Television

3 Sem Hrs

Prerequisite: None. This course in film production emphasizes the technical side of filmmaking. Recent advances in equipment and methods are discussed as the basis of increasingly creative uses of film. Basic orientation is toward film for television using 16mm, low budgets and small crews. Students produce, direct, shoot, and edit their own short films, using television department's equipment. Viewing and technical analysis of both professional and amateur films are intended to help the student establish personal criteria of good technique and quality. (2-2)

RTV 220 Communications History, Law and Responsibilities

3 Sem Hrs

Prerequisite: None. This offering is divided into two parts. The first part will involve study of the origin, development, nature and function of radio and television stations and networks. The economy, laws and regulations of the broadcasting industry are discussed. The self-regulation of the industry and the social controls on it in modern society are evaluated. The other part of this course delves deeply into communications law, regulatory acts and agencies, self-regulatory codes, labor unions, and the ethical and moral considerations of being a broadcaster. This course will, also, review all pending legislation affecting broadcasting and will look toward all future technical and legal developments. (3-0)

RTV 222 Broadcast Journalism

3 Sem Hrs

Prerequisite: None. (Recommended courses: Radio-Television 153 and 157). What is news and how it is obtained and presented by the electronic media, is the crux of this course. Public information in an authoritarian and libertarian society is analyzed. With the growing concern over the mass dissemination of information, it is the purpose of this course to provide a forum for the discussion of the moral, ethical and legal responsibilities that lie at the center of the radio and television news controversy. Such areas as news gathering, writing, laws of libel and slander, information structuring, and public affairs programming are areas of specific interest. The special requirements of radio and television news are examined. This course is at once theoretical, evaluatory and practical. The course is for both radio and television. (3-0)

RTV 225 Advanced Studio Operations

3 Sem Hrs

Prerequisite: Radio-Television 154. The broadcasting student strives to become proficient in the operation of all studio equipment and production elements. Besides the elements introduced in the other television production courses (Radio-Television 149 and 154), the student concentrates on two new specialty areas: set design and scenery construction. (2-2)

RTV 227 Broadcast Sales

3 Sem Hrs

Prerequisite: None. This unique course brings the marketing concept into broadcast sales. Information on the psychological, sociological, economic, and communicative aspects of salesmanship are applied to the broadcast industry. Actual sales presentations will be prepared for "clients". Frequent guests in the broadcast sales field will be invited to share their experience with the class. (3-0)

RTV 251 Television Producing and Directing

3 Sem Hrs

Prerequisite: Radio-Television 225 or consent of instructor. This is the most advanced television production course Delta College offers. It assumes the student has mastered the technique of equipment operation. Through lecture and lab, the student is given the opportunity to use his technical knowledge in the artistry of television producing and directing. Students are required to actually produce and direct their own programs. Emphasis is placed on program planning and organization, production equipment and personnel utilization, talent coordination and direction, and camera direction. (2-2)

RTV 290-299 Special Problems in Radio-Television

(See page 51)

S PEECH

Speech 112 Principles of Public Speaking 3 Sem Hrs

Prerequisite: None. Practical problems of public address for the beginning student. Speaking assignments include impromptu, extemporaneous, manuscript, and memorized methods of delivery. Outlining and organization of content stressed. (3-0)

Speech 201 Speech for the Classroom Teacher 3 Sem Hrs

Prerequisite: None. For education majors, it aims for an understanding of speech in the educational process, self-improvement of the teacher through classroom speech activities, and application of these principles to teacher-pupil relationships. Its comprehensive goal is to aid the teacher in his professional and personal relationships with the students, his colleagues, and his community. (3-0)

Speech 211 Advanced Public Speaking 3 Sem Hrs

Prerequisite: Speech 111 or 112. A survey of several forms of public address. Includes the theory of speech; frequent platform experiences. Attention given to radio and television speaking procedure. All speaking assignments outlined and personal and social communication stressed. (3-0)

Speech 213 The Oral Interpretation of Literature 3 Sem Hrs

Prerequisite: Speech 112 or permission of instructor. Understanding and appreciation of literature through awareness of the oral basis of language. Analysis and communication of written text as thought, feeling, sound, and action. (3-0)

Speech 214 Discussion Techniques 3 Sem Hrs

Prerequisite: A previous speech course or permission of the instructor. Designed to explain discussion as a means to better understanding and action in human affairs and to develop attitudes and skills which enable people to participate in discussion competently. A study of group leadership. (3-0)

Speech 215 Introduction to Theatre 3 Sem Hrs

Prerequisite: None. Designed to give the student some insight into the various aspects of theatrical production. The purpose is to make the student a discriminating observer of dramatic production whether on stage, film, or the T.V. screen. Included in this study are play analysis and practical experience in acting, directing, scenery, and lighting. (3-0)

Speech 216 Theatre History 3 Sem Hrs

Prerequisite: History 111 or 112 or permission of instructor. This class is devoted to introducing the student to the various historical eras of the theatre, from the Ancient Greeks to the present. Emphasis is placed on the development of the physical theatre, representative playwrights, and the development of actor and the director. (3-0)

Speech 217 Technical Theatre

3 Sem Hrs

Prerequisite: None. Designed to acquaint the student with the technical aspects of theatrical production: i.e., set design/construction, lighting, sound, props. Instruction to be both lecture and practical lab. (3-0)

Speech 221 Argumentation and Debate

3 Sem Hrs

Prerequisite: Speech 112 or permission of instructor. Techniques of analysis, reasoning, briefing, and refutation. Each student receives practice in platform debate of the current intercollegiate debate proposition. (3-0)

Speech 290-299 Special Problems in Speech

(See page 51)

MATHEMATICS DIVISION

Division Chairman — Newell H. Remington, Associate Professor

Associate Professor

John H. Brinn
Robert H. DeVinney
John S. Kostoff
Donald L. Laughner
Joseph L. Mazanec

Assistant Professor

Jack L. Crowell
Robert F. Keicher
Anne E. Martin
Donald A. McPhee
Jerry A. Schuitman
James S. Soddy
Donna J. Weyer

Instructor

James A. Verhanovitz

Course prerequisites are stated in terms of Delta courses or the number of years of high school mathematics, and are intended to insure that students choose the appropriate mathematics course. Individuals may have a mathematics background equivalent to a stated prerequisite, in which case they should consult a counselor for assistance in evaluating equivalencies. Any student who feels that circumstances warrant waiving a prerequisite should consult the Mathematics Division for approval. It is recommended that a grade of "C" or better be earned in any mathematics course used as a prerequisite for another mathematics course.

Math 91 Arithmetic

2 Hrs Service Credit

Prerequisite: None. Provides a foundation in arithmetic. The four fundamental operations on whole numbers, common and decimal fractions and percentages, to formulas, ratio and proportion, and an introduction to algebra. (2-0)

Math 92 Algebra I

3 Hrs Service Credit

Prerequisite: Mathematics 91. Natural numbers, integers, first degree equations and inequalities, special products, factoring, fractional equations, graphs and linear systems, radicals, exponents, quadratic equations. (3-0)

Math 93 Plane Geometry	3 Hrs Service Credit	
Prerequisite: Mathematics 92. Calculations with approximate data, metric system, angles, parallel lines, congruency of figures, circle; ratio, proportion and similar polygon formulas applying to plane and solid figures, locus and construction. (3-0)		
Math 101 Technical Mathematics I	5 Sem Hrs	
Prerequisite: Mathematics 92. Mathematics 93 advisable. Review of elementary algebra, slide rule, linear and quadratic equations, graphical representation systems of linear equations, determinants, exponents and radicals, variation and proportion, logarithms. (5-0)		
Math 102 Technical Mathematics II	5 Sem Hrs	
Prerequisite: Mathematics 101. Definitions and properties of trigonometric functions, solutions of triangles, vectors, slide rule, identities, equations, complex numbers, binomial theorem, progressions, and exponential functions. (5-0)		
Math 103 Technical Mathematics III	5 Sem Hrs	
Prerequisite: Mathematics 102. The conics, differentiation and integration of algebraic, trigonometric, logarithmic and exponential functions. Emphasis on the application of the derivative and integral. (5-0)		
Math 108 Elementary Statistics	3 Sem Hrs	
Prerequisite: Mathematics 119. Elementary statistical concepts studied include frequency distributions, measures of central tendency and dispersion, sampling, estimation, testing hypothesis, linear correlation, and regression. (3-0)		
Math 110 Mathematics for Elementary Teachers	3 Sem Hrs	
Prerequisite: Mathematics 92. Numeration systems, sets and numbers, basic concepts and structure of arithmetic. (3-1)		
Math 116 Slide Rule	1 Sem Hr	
Prerequisite: Mathematics 121. (May be taken concurrently.) For engineering students or those majoring in science or mathematics. Consult instructor before purchasing slide rule. (1-0)		
Math 119 Intermediate Algebra	3 Sem Hrs	
Prerequisite: Mathematics 92. Fundamental concepts of algebra, graphs, systems of linear equations, quadratic equations, exponents, radicals, variation, proportion, and logarithms. (3-0)		
Math 121 Plane Trigonometry	3 Sem Hrs	
Prerequisites: Mathematics 93 and Mathematics 119. (Mathematics 119 may be taken concurrently.) Definitions and properties of trigonometric functions, solution of triangles, logarithms, identities, equations, inverse functions, complex numbers and applications. (3-0)		
Math 122 College Algebra		3 Sem Hrs
Prerequisites: Mathematics 93 and Mathematics 119. A brief review of some algebraic fundamentals. Topics covered usually include: Proportions, variation, functions, relations, quadratic equations, systems of equations, inequalities, progressions, probability, binomial theorem, mathematical induction, theory of polynomial functions, matrices and determinants. (3-0)		
Math 131 Introductory College Mathematics		5 Sem Hrs
Prerequisite: Three and one half years of college preparatory mathematics. Functions and graphs, trigonometric functions, fundamental identities, reductions, angular measure, simultaneous linear and quadratic equations, functions of a composite angle, complex numbers, inequalities, mathematical induction, binomial theorem, inverse functions, and determinants. (5-0)		
Math 147 Introduction to Digital Computing		2 Sem Hrs
Prerequisite: Mathematics 122. Programming digital computers, fundamental concepts and techniques of computation with a computer, using the FORTRAN language. Students will have opportunity to run problems on the IBM 1620, and the IBM 360-40. (2-0)		
Math 161 Analytic Geometry and Calculus I		4 Sem Hrs
Prerequisite: Four years of college preparatory mathematics and a high score on the mathematics placement test, or Mathematics 131, or both Mathematics 121 and 122. Inequalities, relations, function, graphs, the line, limits, continuity, differentiation of algebraic functions, applications of differentiation, the definite integral, and circles. (4-0)		
Math 162 Analytic Geometry and Calculus II		4 Sem Hrs
Prerequisite: Mathematics 161. The conics, differentiation of trigonometric and exponential functions, parametric equations, polar coordinates, vectors in a plane, methods of integration, and applications of integration. (4-0)		
Math 261 Analytic Geometry and Calculus III		4 Sem Hrs
Prerequisite: Mathematics 162. Solid analytic geometry, vectors in three dimensions, elements of infinite series, partial differentiation, and multiple integration. (4-0)		
Math 263 Introduction to Linear Algebra		3 Sem Hrs
Prerequisite: Mathematics 162, with Mathematics 261 desirable. Matrices, determinants, linear systems, vector spaces, linear transformations. (3-0)		
Math 264 Introduction to Ordinary Differential Equations		2 Sem Hrs
Prerequisites: Mathematics 261 and 263 or Mathematics 263 concurrently. Some special types of differential equations and their applications, linear differential equations, systems of linear differential equations, solutions by means of power series. (2-0)		
Math 290-299 Special Problems in Mathematics		
(See page 51)		

ALLIED HEALTH

Chal S. Bauer, Coordinator of Radiologic Technology

Assistant Professor

Phyllis A. Jernstadt

Instructor

John M. Flattery

DENTAL ASSISTING

DA 101 Introduction to Dental Assisting

4 Sem Hrs
An introduction to the dental profession and the dental assistant's role as a member of the dental health team. Beginning study of dental nomenclature and office procedures. Nutrition as applied to dental health and oral hygiene. (4-0)

DA 102 Dental Anatomy and Physiology

2 Sem Hrs
The study of head and oral anatomy: the physiology and occlusion of the dentition. In the laboratory students will use dentoforms, models, charts and carvings. (1-3)

DA 103 Dental Materials and Laboratory Procedures

4 Sem Hrs
The study of gypsum products, impression materials, and restorative materials; their physical properties, preparation and manipulation. The construction of base plates, bite rims, custom impression trays and cast metal restorations. (3-3)

DA 104 Dental Instruments and Equipment

2 Sem Hrs
Introduction to dental instruments, equipment: identification, care, use and maintenance. (1-3)

DA 105 Pathology and Pharmacology (Including Anesthesia)

3 Sem Hrs
The pathology of soft and hard tissues of the oral cavity will be examined. Special emphasis on periodontal disease and dental caries. A study of drugs, their sources, methods of administration and precaution in administration. (3-0)

DA 201 Dental Roentgenology

3 Sem Hrs
The study of the principles and properties of x-rays, equipment and materials used in dental roentgenology. (2-3)

DA 202 Operative Procedures

4 Sem Hrs
Chairside assisting in the general and specialty practices. Pre-operative procedures, care of patient, operative procedures, and post-operative care. (3-3)

DA 203 Dental Records and Practice Administration

2 Sem Hrs
A course in office management with emphasis on patient and office records, communications, supplies, and appointment control. (2-0)

DA 210 Internship

7 Sem Hrs
Students will be assigned to work in a dental office, making practical application of all previous course work. (0-21)

DA 290-299 Special Problems in Dental Assisting

(See page 51)

HEALTH SCIENCE

Health Sci 111 Medical Terminology

2 Sem Hrs
Prerequisite: None. Designed to develop a basic understanding of the spelling, meaning and pronunciation of commonly used prefixes, suffixes, and root words, and their combining forms, used in all fields of allied health. (2-0)

Health Sci 290-299 Special Problems in Health Science

(See page 51)

RADIOLOGIC TECHNOLOGY

Rad Tech 101 Radiographic Anatomy

3 Sem Hrs
Prerequisite: Basic Science 101 (Fall semester section for Radiologic Technology students), or permission of the instructor. The study of structure and function of bones; bony prominences and depressions; classification and development of bones and their application to radiography. The digestive, respiratory, circulatory and other body systems. (3-0)

Rad Tech 102 Radiographic Physics

3 Sem Hrs
Prerequisite: Radiologic Technology 112, or permission of the instructor. Designed to familiarize the student with basic physical principles. Deals with mechanics, heat, sound, magnetism, electricity, and light. Emphasis placed on applicability of radiology. (3-0)

Rad Tech 111 Introduction to Radiologic Technology

3 Sem Hrs
Prerequisite: None. Two hours of lecture per week on campus. The theory, history, properties of x-ray, radiographic procedures and positioning as background for further training in radiologic technology. Three hours per week devoted to practice of the theory. This practice will be in the college laboratory. (2-3)

Rad Tech 112 Radiologic Technology I

4 Sem Hrs
Prerequisite: Radiologic Technology 111. Three hours of lecture per week on campus. A continuation of the properties of x-ray, radiographic procedures and positioning. Nursing procedures and sterile techniques used in radiographic practice. Three hours per week devoted to practice of the theory. This practice will be in the college laboratory. (3-3)

Rad Tech 113 Radiologic Technology II

8 Sem Hrs

Prerequisite: Radiologic Technology 112. Three hours of lecture per week on campus. Nomenclature of positioning, techniques for special views, articulations, fractures of various bones, skull and facial bones and pediatric radiography. Techniques for various glands, foreign bodies and soft tissue calcification examination. Fifteen hours per week devoted to practice of the theory. This practice will be in the hospital x-ray department. (3-15)

Rad Tech 211 Advanced Radiologic Technology I

11 Sem Hrs

Prerequisite: Radiologic Technology 113. Three hours of lecture per week on campus and two hours per week at the hospital. Lectures will include special radiographic procedures, the use of various contrast media, advanced study in radiation protection plus film critiques and general review of specific areas of study. Eighteen hours per week devoted to practice of the theory. This practice will be in the hospital x-ray department. (5-18)

Rad Tech 212 Advanced Radiologic Technology II

11 Sem Hrs

Prerequisite: Radiologic Technology 211. Three hours of lecture per week on campus and two hours per week at the hospital. Subject material during this semester will include dental radiography, equipment maintenance, departmental administration, and civil defense monitoring. Film critiques and general review will be held in the hospital. Eighteen hours per week will be devoted to the practice of theory in the hospital x-ray department. (5-18)

Rad Tech 213 Advanced Radiologic Technology III

15 Sem Hrs

Prerequisite: Radiologic Technology 212. A continuation of Radiologic Technology 212; five hours of lecture per week at the hospital which will include nuclear medicine procedures, radiation therapy, and a review of medical and surgical diseases and their relationship to radiography. Overview of previous courses and film critiques will be given weekly. Thirty-five hours of practice of theory will be given in the hospital x-ray department. (5-35)

Rad Tech 311 Radiologic Technology Internship

12 Sem Hrs

Prerequisite: Radiologic Technology 213. This is a graduation requirement; thirty-eight hours per week of practical application of radiologic technology. This experience will be under the supervision of the radiologist and the chief radiologic technologist, and will be gained in the affiliating hospital departments of radiology. Two hours per week of lecture at the hospital will be devoted to film critiques and general review. (2-38)

Rad Tech 312 Radiologic Technology Internship

12 Sem Hrs

Prerequisite: Radiologic Technology 311. A continuation of the graduation requirement; thirty-eight hours per week of practical application of radiologic technology. This experience will be under the supervision of the radiologist and the chief technologist, and will be gained in the affiliating hospital departments of radiology. Two hours per week of lecture at the hospital will be devoted to film critiques and general review. (2-38)

Rad Tech 290-299 Special Problems in Radiologic Technology
(See page 51)**NURSING DIVISION**

Division Chairman – Therese A. Seaman, Assistant Professor

Associate Professor

Crystal M. Lange

Assistant ProfessorJessie R. Dolson
Caroline M. Mertz
Velma J. Phillips
Mary Ann D. Slaggert
Marjorie A. Tait
Joyce E. Whittaker
Bonifacia M. Wojcik**Instructor**

Gayle D. Hanna

NURSING**Nursing 111 Fundamentals of Nursing**

8 Sem Hrs

Prerequisite: Basic Science 101 or Concurrent registration. Introduces the student to principles of care of patients. It is designed to develop the beginning technical observational and communicative skills necessary to meet the basic needs of the individual. (4-12)

Nursing 112 Maternal and Child Nursing

8 Sem Hrs

Prerequisite: Nursing 111 and Nursing 211. Provides an opportunity to study and participate in the nursing care of the mother throughout the maternity cycle and the child from conception through adolescence. Family interrelationships and community health principles are stressed throughout this course. (4-12)

Nursing 211 Nursing in Physical and Mental Illness

8 Sem Hrs

Prerequisite: Nursing 111. The multi-faceted aspects of illness, as they affect nursing care of all age groups, are studied along with principles of rehabilitation, nutrition, pharmacology, psychology and sociology. The student is expected to use prior learning experiences as a foundation to the achievement of more complex skills. (4-12)

Nursing 212 Nursing in Physical and Mental Illness

8 Sem Hrs

Prerequisites: Nursing 111 and Nursing 211. Continuation of Nursing 211. (4-12)

Nursing 213 Trends in Nursing

2 Sem Hrs

Prerequisite: Nursing 211. Provides the opportunity for students to raise professional problems, consider ways of solution, and to understand the modifications which are necessary as indicated by society. An attempt is made to facilitate the transition from the nursing student to graduate nurse. (2-0)

Nursing 220 Team Leadership

Prerequisite: Must be a graduate nurse and employed in nursing. Basic principles of nursing team leadership with emphasis on dynamics of the small work group and on utilization of various levels of personnel. The team leader's role in individualizing patient care: patient assessments; initiating and implementing nursing care plans will also be discussed. Designed for providing continuity of patient care. (2-3)

3 Sem Hrs

Nursing 290-299 Special Problems in Nursing

(See page 51)

SCIENCE DIVISION

Division Chairman – Dr. Richard H. Northrup, Associate Professor

Associate Professor

Lorne P. Adams
Carl L. Altenhof
Carl F. Cisky
Bruce C. Corliss
Dr. Wilbur L. Dungy
Eldon D. Enger
Andrew H. Gibson
Dr. Edward J. Stry

Assistant Professor

Clayton H. Borgman
G. Nelson Greene
J. Sumitra Heinert
Robert J. Hilbert
J. Richard Kormelink
Dr. Clark F. Most, Jr.
Frederick C. Ross
Rodney J. Smith
Westbrook A. Walker
Marion H. Whittaker
David R. Williams

Instructor

Martin T. Abell
Barry A. Carlson
Paul A. Catacosinos
Dr. Paul E. Koblas
Ronald L. Sharp
Arthur G. Smith

AGRICULTURE**Soil Sci 210 Fundamentals of Soil Science**

4 Sem Hrs

Prerequisite: Chemistry 102, 122, or 112. Principles of the origin and development of soils. Relationship of properties to utilization and soil fertility to plant composition and animal health. Emphasis is placed on changing soils to serve man. When offered in the fall, the orientation is toward earth and animal sciences; in the spring, the orientation is toward soil and plant sciences. (4-0)

Crop Sci 250 Plant and Animal Genetics

4 Sem Hrs

Prerequisite: Biology 151 or Biology 161. Fundamental genetic principles with particular reference to problems in plant and animal biology. (3-2)

Animal Sci 325 Applied Animal Nutrition

4 Sem Hrs

Prerequisite: Chemistry 112 or 122 and Chemistry 211. Livestock feeds and their nutrients. Functions of and requirements for nutrients. Evaluation of feeds. Feeding practices. Formulation of rations of beef and dairy cattle, horses, poultry, sheep, and swine. (3-2)

Ag 290-299 Special Problems in Agriculture

(See page 51)

AVIATION**Aviation 101 Private Pilot Ground Training**

4 Sem Hrs

Prerequisite: None. Designed to provide the student with basic principles of flight that are of concern to the private pilot. Special emphasis will be placed on preparing one to pass the Federal Aviation Administration Private Pilot written examination. Emphasis is given to: Pre-flight facts, Federal Aviation Agency regulations, Meteorology, Flight Computer, Navigation and Radio Navigation. (4-0)

Aviation 110 Commercial Pilot Ground Training

4 Sem Hrs

Prerequisite: Knowledge of Private Ground School recommended. Designed to prepare students for the Federal Aviation Administration Commercial Pilot written examination leading to licensure of a commercial pilot by the Federal Aviation Administration. Covers applicable flight information publications, meteorology and weather, navigation, aerodynamics and principles of flight, aircraft instruments. (4-0)

Aviation 201 Instrument Ground School

4 Sem Hrs

Prerequisite: Private Pilot License or Commercial Pilot License. Designed to prepare students for the Federal Aviation Administration Instrument Pilot Ground School written examination leading to licensure of a pilot by the Federal Aviation Administration. (4-0)

Aviation 202 Weather

3 Sem Hrs

Prerequisite: Knowledge of Aviation 101, 110, and 201 recommended. Provides depth in understanding weather. Examines how and why of weather forms, the problems it presents, and solutions to those problems; interprets weather maps and sequence reports. (3-0)

Aviation 290-299 Special Problems in Aviation

(See page 51)

BASIC SCIENCE

Bas Sci 101 Integrated Basic Science

5 Sem Hrs

Prerequisite: One year high school biology and chemistry or permission of the instructor. A study of the fundamental principles of physics, chemistry, microbiology, and pathology as they apply to the functioning of the human body. (4-3)

Bas Sci 102 Integrated Basic Science

5 Sem Hrs

Prerequisite: Basic Science 101. Continuation of Basic Science 101. A study of the fundamentals of human anatomy and physiology. (4-3)

Bas Sci 290-299 Special Problems in Basic Science

(See page 51)

BIOLOGY

Biol 105 Anatomy and Physiology for Medical Assistant

2 Sem Hrs

Prerequisite: None. Designed to provide a basic knowledge of surface anatomy, the body system and physiology. Medical terminology is stressed with emphasis on the spelling and meaning of commonly used prefixes, suffixes, root words and their combining forms. (2-0)

Biol 111 Principles of Biology

4 Sem Hrs

Prerequisite: None. An introduction to the fundamental concepts underlying biology. Major topics considered will be: evolutionary survey of plant and animal kingdoms, cellular structure and metabolism, and the biology of populations. The role of biology in our present world will be the unifying theme for the course. Required of all biology majors and applicable as science credit for non-majors. (3-3)

Biol 112 General Biology

4 Sem Hrs

Prerequisite: Biology 111. A course which deals with the application of the concepts of biology to humans, specifically as the concepts relate to human structure, function, and heredity. (3-3)

Biol 115 Environmental Science

2 Sem Hrs

Prerequisite: None. A course designed to develop an understanding and appreciation of the interacting forces that comprise our environment. Emphasis will center on the modern ecological problems involved in man's relationship to the geographic area under study as it has been affected by the history, economics, and ecological conditions he has created. Using the Saginaw Valley, students will examine various aspects of the exploitation, conservation, and control of the Valley's environment. One required field trip. (2-0)

Biol 151 Botany

4 Sem Hrs

Prerequisite: Biology 111. Chemistry recommended. A study of the basic physiological processes and the structure necessary to carry on these processes. Survey of the plant kingdom with emphasis upon their evolutionary relationships and their life cycles. The environmental importance of plants is also discussed. (2-6)

Biol 161 Zoology

4 Sem Hrs

Prerequisite: Biology 111, Chemistry recommended. A course which deals with classification, evolutionary relationships and a comparison of structure and of function of the major groups of animals. (2-6)

Biol 241 Physiology

4 Sem Hrs

Prerequisite: Biology 161 or a year of college biology or permission of instructor. A study of the function of the major organ systems of animals with special emphasis on the human body. The laboratory will stress the experimental approach to gathering and analyzing physiological data. (3-3)

Biol 261 Comparative Vertebrate Anatomy

4 Sem Hrs

Prerequisite: Biology 161. Evolution of the higher taxonomic groups of chordates and a comparative study of their gross morphology. Emphasis on dissection of various vertebrates. (2-6)

Biol 271 Genetics

4 Sem Hrs

Prerequisite: Biology 112, or Biology 151 or Biology 161. A study of classical and molecular genetics. Hereditary material will be considered with regard to its proliferation, its control of protein synthesis, and with regard to the effect of accumulated genetic changes upon evolution. (3-3)

Biol 290-299 Special Problems in Biology

(See page 51)

CHEMICAL TECHNOLOGY

CT 111 Introduction to Chemical Technology

3 Sem Hrs

Prerequisite: None. Introduces the student to Chemical Technology as a career. Topics include significant figures, error limits, limits of precision for standard laboratory equipment, data taking, and the Handbook of Chemistry and Physics. Selected laboratory experiments are designed to acquaint the student with various phases of industrial chemistry procedures and equipment. (2-3)

CT 112 Chemical Technology Calculations

5 Sem Hrs

Prerequisite: Mathematics 101. Emphasis is on the application of trigonometry, the slide rule and elementary statistics to problems of calculation which are encountered by the chemical technologist. Selected laboratory experiments are designed to furnish laboratory conditions for mathematical applications. (4-3)

CT 211 Principles of Organic Compounds

5 Sem Hrs

Prerequisite: Chemistry 101. An introduction to hydrocarbons and organic compounds. Includes bonding and structure (isomers), alkanes, alkenes, alcohols, aldehydes, ethers, esters, amines, ketones, cyclic compounds, organic acids, and polymerization. (5-0)

CT 215 Physical Principles

5 Sem Hrs

Prerequisites: Chemistry 102 and Physics 121. Basic principles of physical chemistry including states of matter, phase-equilibria, solutions, electrochemistry, physical properties, thermodynamics, and chemical kinetics. (5-0)

CT 221 Chemical Processes Calculations

3 Sem Hrs

Prerequisite: Chemical Technology 215. Stoichiometric principles — conservation of matter and energy. Topics include mass, heat, momentum transfer applied to heat transfer, fluid flow, distillation, humidity, drying evaporation, and extraction. (3-0)

CT 235 Industrial Laboratory Methods I

6 Sem Hrs

Prerequisite: Concurrent with or subsequent to Chemical Technology 211 and Chemical Technology 215. Lectures cover theory and usage of instrumentation. Laboratory experiments apply the principles covered in Chemical Technology 211 and Chemical Technology 215 to practical commercial problems using typical industrial laboratory hardware. (2-12)

CT 236 Industrial Laboratory Methods II

6 Sem Hrs

Prerequisite: Chemical Technology 235 and concurrent with or subsequent to Chemical Technology 221. A continuation of Chemical Technology 235 with emphasis on application of the principles covered in Chemical Technology 221. (3-9)

CT 250 Seminar and Special Projects

2 Sem Hrs

Prerequisite: Concurrent with or subsequent to Chemical Technology 221 and Chemical Technology 236. Designed to develop independent work habits through special projects of the pertinent and current nature. Emphasis will also be given to using library resources, technical journals, handbooks, and catalogs. (1-3)

CT 290-299 Special Problems in Chemical Technology

(See page 51)

CHEMISTRY

Chem 100 Chemistry and the World

4 Sem Hrs

Prerequisite: None. An analysis of the impact of chemistry on our world. Rudimentary concepts of matter and energy will be explored, but particular emphasis will be on current issues such as pollution and the environment, power generation, population, and drugs. Laboratories will be oriented toward using basic techniques in making useful and interesting products. Recommended for elementary school teachers. No previous chemistry or mathematics required. (3-3)

Chem 101 General Chemistry

5 Sem Hrs

Prerequisite: One year of high school algebra. Fundamental principles including laws of chemical combination, states of matter, and chemical phenomena with reference to modern theoretical principles. Designed as a prepertory to Chemistry 111, for those students with no previous work in Chemistry and to satisfy a science requirement in certain curricula. These students using Chemistry 101 as a prerequisite for Chemistry 111 receive credit only for Chemistry 111 toward graduation from Delta College. (5-2)

Chem 102 General Chemistry

3 Sem Hrs

Continuation of Chemistry 101. Emphasis on equilibrium metals, and thermal reactions and non-metals. Also selected topics in organic and biochemistry. (3-2)

Chem 111 General and Inorganic Chemistry

4 Sem Hrs

Prerequisites: High school chemistry or Chemistry 101 and one year of high school algebra with satisfactory placement test scores. Principles concerning structure of matter, chemical and physical changes that matter undergoes, and application of these principles in the laboratory. For students who will need advanced chemistry courses beyond one year of general chemistry, chemistry majors, chemical engineers, pre-dentistry, pre-medicine, pre-veterinary, chemical technology, medical technology, and forestry. (4-3)

Chem 112 General and Inorganic Chemistry 4 Sem Hrs
Prerequisite: Chemistry 111. Continuation of Chemistry 111. Descriptive study of metals and non-metals, electrochemistry, and of equilibrium and further study of principles. (4-3)

Chem 115 Engineering Problems 1 Sem Hr
Prerequisite: Chemistry 111. Intended to familiarize the student with equilibria, electrochemistry, redox equations and titrations. (1-0)

Chem 122 General and Analytical Chemistry 5 Sem Hrs
Prerequisite: Chemistry 111 and approval of the chemistry department. Descriptive chemistry of metals and non-metals including all phases of equilibria. Qualitative Analysis of the cations and quantitative analysis experiments in the laboratory. (4-6)

Chem 201 Organic Chemistry 5 Sem Hrs
Prerequisite: Chemistry 112 or 122. A course in the basic principles of organic reactions and laboratory techniques meeting the professional needs of medical technologists, dental students, and others. (4-4)

Chem 202 Organic Chemistry 5 Sem Hrs
Prerequisite: Chemistry 201. A continuation of Chemistry 201. (4-4)

Chem 211 Organic Chemistry 5 Sem Hrs
Prerequisite: Chemistry 112 or Chemistry 122 with a grade of C or better. A more rigorous course featuring reaction mechanism and structural theory of organic chemistry. Required for majors in chemistry, chemical engineering, and chemical technology. (4-4)

Chem 212 Organic Chemistry 5 Sem Hrs
Prerequisite: Chemistry 211. A continuation of Chemistry 211. (4-4)

Chem 221 Qualitative Analysis 4 Sem Hrs
Prerequisite: Chemistry 112. Principles of chemical equilibria with semi-micro chemical analysis of representative cations and anions. (3-6)

Chem 222 Quantitative Analysis 4 Sem Hrs
Prerequisite: Chemistry 122 or Chemistry 221. Similar to Chemistry 223 but adapted to the needs of medical technology students. Not accepted for chemistry or pre-medical majors. (3-6)

Chem 223 Quantitative Analysis 4 Sem Hrs
Prerequisite: Chemistry 122 or Chemistry 221. Theory and practice of volumetric and gravimetric analysis with major emphasis on volumetric analysis. (3-6)

Chem 290-299 Special Problems in Chemistry
(See page 51)

FIRE PROTECTION TECHNOLOGY

Fire Prot Tech 201 Fire Hazards I 3 Sem Hrs
Prerequisite: None. A basic course in the chemistry, use, storage, handling, control, transportation of, and fire protection against hazardous liquids, solids, gases, oxidizers, water-reactive chemicals, and gases. Demonstrations will illustrate readings and discussions. (3-0)

Fire Prot Tech 202 Fire Hazards II 3 Sem Hrs
A course in the control of and the fire protection against specific hazards connected with processing, handling, transporting, and storing flammable liquids, gases, solids; Also the control of and fire protection against fire hazards in aviation, shipbuilding, use of radioactive material and radiation machines, building construction, business (hardware, farming, elevators, etc.), and housekeeping. (3-0)

Fire Prot Tech 290-299 Special Problems in Fire Protection Technology
(See page 51)

GEOGRAPHY

Geog 105 Human Geography 4 Sem Hrs
Prerequisite: None. Study focuses on the aspects of geography concerned with man, his utilization of and his impact upon the natural environment. Included are population distribution and growth, settlement forms, utilization and conservation of natural resources, the impact of technology on human occupancy of the earth, man's role in modifying the earth's surface and the origin and spread of cultural elements. (4-0)

Geog 111 Physical Geography 4 Sem Hrs
Prerequisite: None. Study of the natural environment which is important to man and his activities; introduction to maps and physical features; earth-sun-moon relationships; earth materials, land forms; drainage; and major natural resources. Introduction to weather and climate, soils and vegetation – their character, causes, significance and distribution. (4-1)

Geog 113 World Regional Geography 4 Sem Hrs
Prerequisite: None. Essential geographic characteristics and significant problems of the major regions of the world; cultural and natural resources of the nations of the world. (4-0)

Geog 114 World Cultural Regions (Western World) 4 Sem Hrs
Prerequisite: None. Essential geographic characteristics and concepts of the Western World. The focus will be on the United States and Canada, Latin America and Europe. These regions will be compared and contrasted in terms of their present and potential development. (4-0)

Geog 115 World Cultural Regions (Non-Western World) 4 Sem Hrs
Prerequisite: None. Essential geographic characteristics and concepts of the Non-Western World. The focus will be on Africa, Asia, and the Soviet Union. These regions will be compared and contrasted in terms of their present and potential development. (4-0)

Geog 211 Economic Geography 4 Sem Hrs
Prerequisite: Geography 111 or 113, or permission of instructor. Fundamentals of economic activities of the major world geographic regions; a study of activities, such as, agriculture, forestry, fishing, mining, manufacturing, transportation, and trade. (4-0)

Geog 222 Geography of Asia 3 Sem Hrs
Prerequisite: Geography 111 or 113 and permission of instructor. Regional geographic interpretation of the area as a continent. Study of relationships of physical, economic, social and political environment to human activity. (3-0)

Geog 223 Geography of Europe 3 Sem Hrs
Prerequisite: Geography 111 or 113 and permission of instructor. Similar to Geography 222 but applied to Europe. (3-0)

Geog 226 Geography of United States and Canada 3 Sem Hrs
Prerequisite: Geography 111 or 113 and permission of instructor. Similar to Geography 222 but applied to the United States and Canada. (3-0)

Geog 245 Geography of Michigan 3 Sem Hrs
Prerequisite: Permission of Instructor. A regional geographic interpretation of Michigan as a setting for economic activity within the state. Study focuses on the geographic relationships between the environment, and the cultural and economic activities within Michigan. (3-0)

Geog 290-299 Special Problems in Geography
(See page 51)

GEOLOGY

Geol 111 Physical Geology 4 Sem Hrs
Prerequisite: None. A study of the materials and agents responsible for the development of topographic and structural features of the earth. Introductory study of common rocks and minerals. Introduction to maps. One field trip is required. (3-2)

Geol 112 Historical Geology 4 Sem Hrs
Prerequisite: Geology 111. Study of the successive stages in development of North America as a typical continent, and the evolution of life. Interpretation of topographic and geologic maps and identification of invertebrate fossils. One field trip is required. (3-2)

Geol 211 Mineralogy 4 Sem Hrs
Prerequisite: One semester of college chemistry (may be taken concurrently) or permission of the instructor. Introduction to the common crystal systems of minerals, followed by a study of the physical and chemical properties, occurrence, formation, and uses of approximately 200 important economic and rock-forming minerals. (1-4)

Geol 221 Invertebrate Paleontology 3 Sem Hrs
Prerequisite: Geology 112 or permission of the instructor. Morphology, classification, development, and geologic range of the major invertebrate groups. (2-2)

Geol 231 World Mineral Resources (Non-metallic) 3 Sem Hrs
Prerequisites: Geology 111 and 112 or permission of instructor. Study of the origin and geographic distribution of petroleum, coal, building stones, lime and cement, clay, sand and gravel, salt and gypsum fertilizers, gem stones, and other non-metallic minerals. Occasional field trips. (3-0)

Geol 232 World Mineral Resources (Metallic) 3 Sem Hrs
Prerequisites: Geology 111 and 112 or permission of instructor. Study of the origin and geographic distribution of iron, copper, lead, zinc, aluminum, radioactive minerals, and other metallic resources. Occasional field trips. (3-0)

Geol 290-299 Special Problems in Geology
(See page 51)

PHYSICAL SCIENCE

Phys Sci 101 Physical Science

Prerequisite: High school algebra and plane geometry. For students interested in understanding the major concepts of geology, chemistry, astronomy, and physics. It is intended to give the student a better grasp of the scientific method and to afford practice in critical thinking. (3-2)

Phys Sci 102 Physical Science

Prerequisite: Physical Science 101. Continuation of Physical Science 101. (4-0)

Phys Sci 290-299 Special Problems in Physical Science

(See page 51)

PHYSICS

Physics 101 Applied Physics

Prerequisites: Mathematics 92 and Mathematics 93 or equivalent. Designed to cover the same subjects as high school physics course with emphasis on mechanics, heat and fluids, as required for technical programs. (5-2)

Physics 111 General Physics

Prerequisites: High school physics, and high school algebra I and II. Trigonometry recommended. Designed to familiarize the student with basic physical principles. Deals with mechanics, heat and sound. (4-3)

Physics 112 General Physics

Prerequisite: Physics 111. Continuation of Physics 111. Covers magnetism, electricity, light, and modern physics. (4-3)

Physics 121 Chemical Physics

Prerequisite: Mathematics 101. Principles of heat, sound, light and optics. (2-0)

Physics 211 Physics

Prerequisites: High school physics or equivalent, and Mathematics 161 or its equivalent. For engineers and science majors. Mechanics, heat and sound. (5-3)

Physics 212 Physics

Prerequisites: Physics 211 and Mathematics 162. Continuation of Physics 211. Magnetism, electricity, light, and modern physics. (5-3)

Physics 215 Engineering Mechanics, Statics

Prerequisites: Physics 211 and Mathematics 162. Mathematics 162 may be taken as a parallel course. Covers forces, components, vectors, moments, couples, methods of sections, stress in frame structures, cables, friction, first moments, products of inertia, and centroids. (3-0)

Physics 290-299 Special Problems in Physics

(See page 51)

SOCIAL SCIENCE DIVISION

Division Chairman, Richard E. Klein, Associate Professor

Professor

Dr. Louis W. Doll
Dr. Robert M. Roman

Associate Professor

William E. Barber
Paul E. Carrico
Dr. Jean G. Cheger
Patricia Drury
Lawrence E. Glynn
Joseph M. Godard
Clarence W. Hackbart
Calvin E. Hoerneman
David C. Howard

Assistant Professor

Harold D. Arman
Karl A. Boedecker
Jon W. Gosser
Jeremy W. Kilar
Paul E. Leek
Paul D. Moore
Judith A. Wiley
John R. Wilhelm
Jay J. Zumeta

Instructor

John A. Dunn
Mary K. Fayerweather
Clarence Hooker
David R. Kennedy
Thomas R. Ortenburger
Santiago Peregrino
Jerry B. Tingstad
Alicia R. Woodson

ECONOMICS

Econ 111 Essentials of Economics

3 Sem Hrs

Prerequisite: None. A survey of the operation of the American economy as a mixed economy and the principles of contemporary economic analysis that underlie its operation. (3-0)

Econ 112 Essentials of Economics

3 Sem Hrs

Prerequisite: Economics 111. Continuation of Economics 111 with major emphasis on surveying selected current economic problems and making application of economic analysis to these problems. (3-0)

Econ 221 Principles of Economics

4 Sem Hrs

Prerequisite: Sophomore standing or permission of instructor. The allocation problems of every society with emphasis on their solutions under the American capitalistic economy, preliminary analysis of the demand and supply activities of individuals, firms, groups, and governments; measuring national income and product, and explaining their fluctuations; monetary and banking institutions in relation to specialization and exchange, business cycles, and government fiscal and monetary policies. Not open to students with credits in Economics 111 or 112. (4-0)

Econ 222 Principles of Economics

4 Sem Hrs

Prerequisite: Economics 221. The commodity markets; prices as causes and effects of supply and demand; determinants of consumer buying and of the actions of firms as buyers and sellers; factor markets; wages, rent, and interest as special types of prices; the role of profits and profit expectations, growth and development problems; international trade and finance; alternative economic systems. Not open to students with credits in Economics 111 or 112. (4-0)

Econ 231 Industrial Relations	3 Sem Hrs	
Prerequisite: Economics 111 or 221. Provides a study of the human factor in industry. Problems of wages, hours, unemployment, working conditions; federal and state laws which relate to labor and management relations; policies and practices of unions and management. (3-0)		
Econ 232 Case Studies in Labor Relations	3 Sem Hrs	
Prerequisite: Permission of instructor. Application of principles of industrial relations to collective bargaining case studies. Actual cases are discussed and evaluated in reference to current labor laws and personnel practices. (3-0)		
Econ 240 Agriculture in the Economy	4 Sem Hrs	
Prerequisite: Economics 221. Economic and management principles in agriculture. Demand for farm product, principles of marketing and price determination. Identification of individual and social problems related to agriculture. Alternative approaches to their solution. (4-0)		
Econ 280 Money and Banking	3 Sem Hrs	
Prerequisite: Economics 111 or 221. The role of money and credit in the economic system; emphasizing the operation of the federal reserve system and private financial institution. (3-0)		
Econ 290-299 Special Problems in Economics		
(See page 51)		

HISTORY

Hist 111 A Survey of Early Western Civilization	4 Sem Hrs	
Prerequisite: None. Political, social, economic, and cultural history of Europe from Prehistoric times to the end of the Reformation. Particular attention given to characteristics of civilizations and their relevant contributions to the modern world. (4-0)		
Hist 112 A Survey of Later Western Civilization	4 Sem Hrs	
Prerequisite: None. History 111 recommended. Political, social, economic, and cultural history of Europe from the 1600's to the present time. Particular attention is given to cultural and democratic movements and their influence on current history. (4-0)		
Hist 113 History of Michigan	2 Sem Hrs	
Prerequisite: None. History from the time of the first known human inhabitants through French and British domination, and finally American acquisition of Michigan leading to territorial status and statehood. Emphasis on Michigan history as a representative part of human culture. (2-0)		
Hist 214 Black Man in America: pre Colombian Times to 1888	3 Sem Hrs	
Prerequisite: None. History 221 recommended. Traces the interaction among Europeans, Africans, and aboriginal Americans with emphasis on the resultant slave trade and systems of slavery in North, Central and South America. Also examines sources and results of discrimination other than slavery. Theories and practices of abolitionists until emancipation in Brazil, 1888 are also studied. (3-0)		
Hist 215 Black Man in the U.S.: 1888 to Present	3 Sem Hrs	
Prerequisite: None. History 222 recommended. History of the shift in Negro attitudes from slave mentality to greater consciousness of racial pride and human dignity. Also traces the causes and effects of shifts in colored population from rural South to urban North and West. The impact of neo-segregation and other discrimination, as well as the national and international effects of more extensive race consciousness will be examined. (3-0)		
Hist 221 History of the United States to 1865	3 Sem Hrs	
Prerequisite: None. An introductory course in American history from its immediate European background to the close of the Civil War. Special emphasis is given the growth of institutions and ideas. The political, economic, and social experience of the young Republic, and their influences on contemporary America are also examined. (3-0)		
Hist 222 History of the United States from 1865 to the Present	3 Sem Hrs	
Prerequisite: None. A survey of Modern America from the post Civil War period to the present with special emphasis on the industrial growth and agricultural protest. Experiments with imperialism, domestic reform, and world leadership and their influences on contemporary history are also studied. (3-0)		
Hist 232 History of Russia	3 Sem Hrs	
Prerequisite: History 111 or 112. History 112 especially recommended. A survey of the major lines of Russian political and cultural development from Kiev in the 900's to the present, with more emphasis on the 19th and 20th Century than on earlier eras. Student reports, on topics historical and cultural, constitute about 40% of course. (3-0)		
Hist 244 History of Urban America	3 Sem Hrs	
Prerequisite: An American History course or permission of instructor. A study of American cities from colonial times to the present. Several themes will be emphasized: European foundations of Urban America; Colonial solutions to the Urban challenge; and the problems of planning an American city. Factors in demographic and physical growth, as well as the growth of mass transit, racial and ethnic composition; housing and urban violence will also be included. (3-0)		
Hist 290-299 Special Problems in History		
(See page 51)		

LAW ENFORCEMENT

LE 101 Police Recruit Training

4 Sem Hrs

Prerequisite: None. Designed to give the student the basic training necessary to assume the duties of a patrolman. Topics included are constitutional law, criminal law, laws of arrest, search and seizure, investigative techniques, first aid, firearms, motor vehicle laws, defensive tactics, and patrol techniques. Class meets for a minimum of 142 hours in a three-week period.

LE 102 Command Officers Training

3 Sem Hrs

Deals in both the theory and practice of good business procedures as applied to police operations and to improve the caliber of command officers. To be also concerned with conditioning the attitudes of command officers and creating an awareness of the responsibilities of command positions within a police department. (3-0)

LE 110 Introduction to Law Enforcement

3 Sem Hrs

Prerequisite: None. Philosophical and historical backgrounds; agencies and processes; administrative and technical problems; and career orientation. (3-0)

LE 111 Police Organization and Administration

3 Sem Hrs

Prerequisite: Law Enforcement 110. An analysis and study of the functional divisions of the modern police department. Functions to be studied will include management operations, coordination of activities, communications, recruiting, training, public relations and a look at the future of law enforcement. (3-0)

LE 112 Police Patrol Procedures

3 Sem Hrs

Study of patrol as a basic police function, including both the theoretical and functional aspects. Responsibilities of, purposes, methods, types and means of police patrol. Examination of patrol strength layout, beats, technological advancements affecting the patrol officer. (3-0)

LE 180 Retail Security

2 Sem Hrs

Prerequisite: None. This course covers the organization and management of retail security for all types of retail outlets, large and small. Particular attention is given to retail security programs already functioning, the effectiveness and scope of these programs, and the changing problems in retail security. (2-0)

LE 184 Industrial Security I

3 Sem Hrs

Prerequisite: None. Theoretical approach to the role of security officers in business and industry. Plant and business protection. Legal responsibilities and authority of plant security officers. Problems of business and industrial espionage and petty thefts. Report writing. (3-0)

LE 185 Industrial Security II

3 Sem Hrs

Prerequisite: Law Enforcement 184. Practical approach to the role of security officers concerning fire prevention, safety programs, first-aid and internal security. (3-0)

LE 210 Introduction to Criminal Investigation

3 Sem Hrs

Introduction to criminal investigation procedures including theory of an investigation, conduct at crime scenes, collection and preservation of physical evidence; methods used in police science laboratory; finger prints, ballistics, documents, serology, photography, and related forensic sciences. (3-0)

LE 220 Crime Laboratory Techniques

3 Sem Hrs

Prerequisite: Law Enforcement 210. Field techniques for the preservation and collection of physical evidence at the scene of crime or civil disturbance. Application of techniques of crime photography, finger print lifting, plaster casting, blood stain preservation, and other methods of laboratory analysis. (3-3)

LE 250 Introduction to Juvenile Delinquency

3 Sem Hrs

Prerequisite: None. Juvenile delinquency theories, work of youth agencies, legislative involvements, and new developments in the prevention of juvenile crime. (3-0)

LE 260 Legal and Criminal Behavior

3 Sem Hrs

Application of psychological principles, methods, and techniques to legal and criminal problems and procedures. Examination of the formation, detection, prevention, and rehabilitation of criminal behavior. Psychological implications of testimony, legal arguments, trial tactics, and other courtroom procedures. Examination of interviewing and interrogation techniques and applicability of the polygraph process. (3-0)

LE 270 Evidence and Criminal Procedure

3 Sem Hrs

Prerequisite: None. Deals with rules of evidence and particular import at the operational level in law enforcement and with criminal procedure in important areas such as arrest, force, and search and seizure. (3-0)

LE 271 Criminal Law

3 Sem Hrs

Prerequisite: None. Elements and proof in crime of frequent concern in law enforcement with reference to principal rules of criminal liability. Importance of criminal law at the enforcement level is considered from crime prevention to courtroom appearance. (3-0)

LE 290-299 Special Problems in Law Enforcement

(See page 51)

POLITICAL SCIENCE

Pol Sci 103 Introduction to American Government

3 Sem Hrs

Prerequisite: None. (Not open to students with credit in Political Science 111.) Organization and functions of the political, electoral, legislative, administrative, and judicial processes of the federal, state, and local governments. (This course satisfies the State requirements in political science.) (3-0)

Pol Sci 111 American Government and Politics

4 Sem Hrs

Prerequisite: None. (Not open to students with credit in Political Science 103.) A study of the American political system, utilizing the techniques of political science. Particular emphasis is placed on the organization and functioning of the electoral, legislative, administrative, and judicial process of the national government. Comparisons are made between federal, state, and local governments. Recommended for pre-law or social science majors or minors. (This course satisfies the State requirements in political science.) (4-0)

Pol Sci 128 Introduction to Urban-Public Service Problems

4 Sem Hrs

Prerequisite: Political Science 111 or 103. Covers the services normally performed in major areas of specialization (e.g., Urban Professional Assistant, Social/health Services Assistant and Engineering Assistant) and the organizational relationships of these specialties in an urban setting. (4-0)

Pol Sci 129 Public Relations for Public Service Employees

3 Sem Hrs

Prerequisite: A basic general course in public service and community relations. Incorporates material from several social science disciplines and focuses on how public service personnel build good will, handle complaints, discharge follow-up responsibilities, etc. (3-0)

Pol Sci 212 State and Local Governments

3 Sem Hrs

Prerequisite: A course in political science or permission of the instructor. Development, structure, organization and problems of the state and local units of governments along with their relation to the federal government. (3-0)

Pol Sci 220 Minority Group Politics

3 Sem Hrs

Prerequisites: Political Science 103 or 111, or the permission of the instructor. An examination of the dynamics of minority group politics in the American political system. The nature, role, techniques, and objectives of ethnic groups will be analyzed, with special emphasis on the Afro-American and the Mexican-American. (3-0)

Pol Sci 221 Comparative Government

3 Sem Hrs

Prerequisite: A course in political science or history. The study of major European and selected non-western political systems. Emphasis is placed on the techniques of comparative analysis and concepts of modernization, political development, and political culture. (3-0)

Pol Sci 225 International Relations

3 Sem Hrs

Prerequisite: A course in political science or history. Introduction to the study

of international politics. Covers the nation-wide system, cold war politics, colonialism, and the problems of political stability. Also includes a survey of regional and international organizations. (3-0)

Pol Sci 227 American Political Parties

3 Sem Hrs

Prerequisite: A course in political science or United States history. History, structure, and functions of political parties in the United States; interaction of political parties, pressure groups, and public opinion. (3-0)

Pol Sci 228 Internship in Public Service

3 Sem Hrs

Prerequisite: Political Science 128. Upon completion of prerequisite, the student is assigned to available positions in governmental units for 20 hours per week for one semester. Students interested in taking the Federal Civil Service Exams will be given pre-exam training. Interns will meet each week to report on their job projects. (3-20)

Pol Sci 290-299 Special Problems in Political Science

(See page 51)

PSYCHOLOGY

Psy 101 Applied Psychology

3 Sem Hrs

An introductory course in basic principles of human relations that may be used in business and industry. Emphasis on understanding motivation and behavior in practical situations; help in developing an appreciation of our own behavior so that students may work more successfully with supervisors and with peers. (3-0)

Psy 211 General Psychology

4 Sem Hrs

Prerequisite: Sophomore standing or permission of instructor, if second term freshman. Scientific principles underlying experience and behavior. Designed to give an understanding of human behavior as affected by learning, motivation, intelligence, and personality. (4-0)

Psy 223 Child Psychology

3 Sem Hrs

Prerequisite: Psychology 211. Facts and generalization concerning growth of children from conception to adolescence; this course deals with physical, mental, social and emotional development. (3-0)

Psy 231 Psychology of Personality

3 Sem Hrs

Prerequisite: Psychology 211. Application of psychological principles to interpersonal behavior; study of factors in the development of constructive personal adjustment as influenced by human relations in home, school, and community. (3-0)

Psy 290-299 Special Problems in Psychology

(See page 51)

SOCIOLOGY

Soc 121 Marriage and Family

3 Sem Hrs

Prerequisite: None. The study of family relationships in anticipation for, and participation in, marriage and family life. Consideration is given to historical, social, psychological, biological, and economic factors which contribute to the success or failure in family relationships. Credits are transferable as elective or minor credits, but, in accordance with individual college policies, may not apply toward a major in sociology. (3-0)

Soc 150 Community Organization and Analysis

3 Sem Hrs

A survey of the various public and private social agencies present in the community. Primary emphasis is upon the specific purposes of these agencies and their role in community organization. This course is designed primarily for students enrolled in Public Service Curriculums to acquaint them with the resources available for meeting community problems. (3-0)

Soc 211 Principles of Sociology

3 Sem Hrs

Prerequisite: None. An analysis of the structure and function of society and community through consideration of the basic generalizations and concepts utilized in sociology. (3-0)

Soc 212 Social Problems

3 Sem Hrs

Prerequisites: Sociology 211 or Psychology 211. An analysis of contemporary social problems within the theoretical framework of social change, value conflicts, and social deviation; an attempt to examine resulting political as well as personal disorganization. (3-0)

Soc 215 Sociology of Minority Groups (Inter-group Relations)

3 Sem Hrs

Prerequisite: None. A sociological approach to the study of prejudice and discrimination against minority groups, primarily in the United States. The emphasis is upon the analysis of both causes and solutions to the problem of prejudice and discrimination. (3-0)

Soc 231 Cultural Anthropology

3 Sem Hrs

Prerequisite: Sophomore standing or consent of instructor. An introduction to man in his cultural setting. Emphasis will be given to the study of primitive cultures and the implications for understanding our own culture. (3-0)

Soc 290-299 Special Problems in Sociology

(See page 51)

TECHNICAL DIVISION

Division Chairman — Wilbert Kleinsmith, Associate Professor

Associate Professor

Donald A. Miotto
William J. Streib

Assistant Professor

Darrell R. Berry
Thomas R. Freiwald
John T. Hoffmann
Michael L. Holcombe
Arthur M. Leinberger
Craig A. McClain
Ralph M. McGivern
Richard E. Miller
Joseph R. Paquin
Alvin H. Schmidt
Arnold A. Schwartz
Robert N. Tinker

Instructor

William S. Guild
Don E. Holzhei
Kenneth W. Masck

ARCHITECTURE

Arch Tech 101 Materials and Methods of Architectural Construction

2 Sem Hrs

Prerequisite: None. A study of the basic building materials of the construction industry. Emphasis on handling and placing the various materials into typical assemblies and arrangements. (1-2)

Arch Tech 105 Architectural Drafting I

7 Sem Hrs

Prerequisite: None. Exercises in the fundamentals of Architectural Drafting including linework, lettering, symbols, orthographic and pictorial representation. Exercises in the development of freehand and instrument drawings of wall, roof, and floor assemblies of various types of construction. Introduction to construction drawings. (3-12)

Arch Tech 106 Architectural Drafting II

7 Sem Hrs

Prerequisite: Architectural Technology 105 or permission of the instructor. Development of construction drawings for a residence including architectural, electrical, and mechanical. Development of outline specifications. (3-12)

Arch Tech 111 Mechanical and Electrical Equipment for Buildings

4 Sem Hrs

Prerequisite: None. A study of the fundamentals and operating principles of mechanical and electrical equipment for buildings; including water systems, fire protection, plumbing systems, air conditioning systems, electrical systems, vertical transportation, sound and signal systems, and acoustics. (4-0)

Arch Tech 202 Specifications and Contracts

2 Sem Hrs

Prerequisite: None. A study of basic principles and legal implications of contracts, architectural office practice, specifications, and building codes. (2-0)

Arch Tech 203 Estimating

2 Sem Hrs

Prerequisite: Architectural Technology 101 or permission of the instructor. A study of the principles of calculating labor and material costs and of building construction. (2-0)

Arch Tech 205 Architectural Drafting III

7 Sem Hrs

Prerequisite: Architectural Technology 106. Development of construction drawings for a non-residential building. Introduction to concrete and steel construction, with their various detailing requirements, symbolisms and characteristics in terms of installation of mechanical and electrical systems. Development of outline specifications. (3-12)

Arch Tech 206 Architectural Drafting IV

7 Sem Hrs

Prerequisite: Architectural Technology 205. Interpretation of an architect's sketches into a meaningful preliminary which would indicate a buildable building in the envelope displayed. Development of construction drawings based on the preliminary. Simulated office procedure using project teams. Development of outline specifications. (3-12)

Arch Tech 211 Elements of Structural Design

4 Sem Hrs

Prerequisite: Physics 101 or permission of the instructor. Review of basic mechanics. Analysis of live and dead loads on simple structural members. Use and limitations of wood, steel and concrete handbooks in structural design. Use of structural calculations in solving basic structural problems. (4-0)

Arch Tech 212 Theory and Practice of Structural Steel Design

4 Sem Hrs

Prerequisite: Architectural Technology 211 or permission of instructor. A detailed study and practice of methods used in structural steel design, drafting, and fabrication. Includes load and stress analysis, structural framing and connection design, and drafting techniques used in the development of shop drawings. This course is not required in any curriculum, nor may it be used as a substitute or as an elective in the Architectural Technology Curriculum. (3-2)

Arch Tech 221 Site Preparation

2 Sem Hrs

Prerequisite: None. A study of the fundamentals of site preparation including utilities, soil testing, landscaping, drives, and walkways. Elements of surveying including: use of equipment, measurement of distances, angles, elevations, contours, drainage, and other site work related to building design and location. Development of a site plan and details. (1-2)

Arch Tech 231 Concrete Fundamentals

3 Sem Hrs

Prerequisite: None. A detailed study of the history, manufacture, characteristics and types of cement. Selection and design of concrete mixtures; sampling and testing plastic concrete; placing, finishing, and curing of concrete. Concreting during hot and cold weather. (3-0)

Arch Tech 290-299 Special Problems in Architectural Technology

(See page 51)

AUTOMOTIVE**ATS 101 Service Orientation and Maintenance**

12 Sem Hrs

Prerequisite: None. The primary objectives of this course is to provide the student with the basic skills necessary for employment in the automotive service industry. Emphasis is placed upon job orientation, efficient shop organization, safe work habits, and the development of accuracy and care in the performance of mechanical duties. The student will be introduced to a background knowledge of the components and operating principles of the automobile through a program which is saturated with practical experience and with lecture classes utilized on an "as needed" basis. (6-18)

ATS 102 Electrical and Fuel System Service

12 Sem Hrs

Prerequisite: None. The student is exposed to the information necessary to perform efficient tune-ups and electrical services, to provide experience in component disassembly, testing and reassembly, and to perform needed bench tests of these components. Speed, quality, and thoroughness are stressed in this phase of the program along with the development of efficient work habits. "Hands on" experience is again emphasized through a utilization of lectures on an "as needed" basis. (6-18)

ATS 103 Suspension and Brake Service

12 Sem Hrs

Prerequisite: None. Emphasis is placed upon proper procedure involved with alignment and brake services, and on the ability to merchandise these alignment and brake services. The full utilization of "hands on" experience provides for development of diagnostic abilities along with development of sound repair and work habits which provides the basis for the maturation of a qualified alignment and brake specialist. (6-18)

AT 101 Service Orientation and Maintenance

3 Sem Hrs

Prerequisite: None. Students will perform "wait-on" maintenance and service jobs on customers' automobiles. Emphasis is on the types of service employers expect their technicians to perform. (2-3)

AT 103 Engines

3 Sem Hrs

Prerequisite: Automotive Technology 101. (May be taken concurrently.) Principles, design, construction, operation, and service procedures of modern gasoline engines. Students are prepared for practical experience in engine maintenance and service. (2-3)

AT 105 Laboratory Practices

2 Sem Hrs

Prerequisite: Automotive Technology 103. (May be taken concurrently.) Students make practical application of service procedures and techniques included in previous technical courses. Primary objective is to provide students with supervised practical experience. (0-5)

AT 106 Automotive Electricity

3 Sem Hrs

Prerequisite: None. Course content is based on electrical fundamentals and practical applications. Instructional units include electricity and magnetism, storage batteries, ignition systems, charging systems, starting systems, and instrumentation. (3-0)

AT 110 Diagnosis and Tune-Up Prerequisites: Automotive Technology 103 and Automotive Technology 106. Study of automotive diagnoses and tune-up procedures as they pertain to the function and control of the engine, fuel, ignition, starting and charging systems. (2-3)	3 Sem Hrs	AT 209 Electrical Circuits Prerequisite: Automotive Technology 106. Provides a thorough understanding of chassis and body wiring diagrams as they apply to diagnosis, replacement or repair of horn, lighting, accessory, signaling and warning devices. Stress on interpretation of the function and location of units with respect to diagnosis, service and replacement of defective units. (3-0)	3 Sem Hrs
AT 111 Cranking and Charging Systems Prerequisites: Automotive Technology 101 and Automotive Technology 106. Comprehensive study of components and circuitry involved in starting and charging systems including the function, design, construction, operation, trouble shooting, and service procedures. (2-3)	3 Sem Hrs	AT 211 Driveline Fundamentals Prerequisite: None. A course emphasizing the fundamentals of major driveline components such as clutches, standard transmissions, over-drive transmissions, automatic transmissions, differentials, and rear suspension systems. Service of these components is an integral part of the total program. (5-5)	7 Sem Hrs
AT 112 Laboratory Practices Prerequisites: Automotive Technology 110 and Automotive Technology 111. (May be taken concurrently.) Students make practical application of service procedures and techniques included in previous technical courses. Primary objective is to provide students with supervised practical experience. (0-5)	2 Sem Hrs	AT 212 Laboratory Practice Prerequisite: Automotive Technology 211. (May be taken concurrently.) Students make practical application of service procedures and techniques included in previous technical courses. Primary objective is to provide students with supervised practical experience. (0-5)	2 Sem Hrs
AT 113 Fuel Systems Prerequisite: None. Students are exposed to the theory of carburetion along with a detailed study of the construction, operation, and trouble shooting practices involved with all components of a fuel system. (3-0)	3 Sem Hrs	AT 213 Service Management Prerequisite: None. An orientation to the automotive industry: study of common channels of distribution, the major franchise, and allied lines. Included is the dealership, its location, building facilities and organizational structure. Emphasis is placed on service management responsibilities, organizing service personnel, organizing facilities, establishing objectives, and controlling performance. (4-0)	4 Sem Hrs
AT 114 Emission Control Systems Theory, service, and emission control applications form a major portion of the course. Objectives are centered around crankcases, exhaust, and fuel storage emission control systems. Student involvement will include classroom discussion, service, and parts merchandising of various emission control applications. (2-0)	2 Sem Hrs	AT 290-299 Special Problems in Automotive Technology (See page 51)	
AT 206 Wheel Alignment Prerequisite: None. Study of automotive suspension systems, including nomenclature, theory of operation, and service and repair procedures. Emphasis is on passenger car and light truck suspension systems, wheels and tires, steering gears, and related components. (2-3)	3 Sem Hrs	DRAFTING	
AT 207 Brake Service Prerequisite: None. Passenger car and light truck brake systems are studied with emphasis placed on nomenclature, theory of operation, and service and repair procedures. Included in the program are power brake, emergency brake, and disc brake systems. (2-3)	3 Sem Hrs	Dr 105 Elements of Industrial Drafting Prerequisite: None. Elements of drafting for technicians. Lettering standards, use of instruments and equipment. Orthographic and multiview drafting and sketching, sections and conventions, axonometric and oblique drawing. (1-5)	3 Sem Hrs
AT 208 Laboratory Practice Prerequisites: Automotive Technology 206 and Automotive Technology 207. (May be taken concurrently.) Students make practical application of service procedures and techniques included in previous technical courses. Primary objective is to provide students with supervised practical experience. (0-5)	2 Sem Hrs	Dr 106 Intermediate Industrial Drafting Prerequisite: Drafting 105. Continuation of Drafting 105. Fasteners, dimensioning, layout, details, assembly, auxiliary projection and sketching. (1-5)	3 Sem Hrs
		Dr 110 Dimensional Measurement Prerequisite: Mathematics 91 or equivalent. This course is designed around the practical application of fractions, decimals, and whole numbers as they relate to the drafting room or machine shop. Content includes measuring tools, weights and measures, geometric construction and measurement, percentages, ratios, speeds of pulleys and gears, speeds and feeds of machine tools, and the Table of Natural Functions and its relationship with practical application in the industrial setting. (4-0)	4 Sem Hrs

Dr 111 Engineering Drawing	5 Sem Hrs	
Prerequisite: None. Introduction to engineering drawing, freehand sketching, the tools we work with, drafting equipment, the methods we use, freehand lettering, how to draw lines, types of lines, drafting geometry, projection of views, sectioning views, drafting conventions, dimensioning, lettering notes, bill of material, assembly drawings, detail drawings, pictorial drawings, how to check a drawing, types of drawings. (3-6)		
Dr 112 Engineering Drawing	5 Sem Hrs	
Prerequisite: Drafting 111. May be taken concurrently with Drafting 111. This course is a continuation of Drafting 111. (2-7)		
Dr 113 Tool Design	5 Sem Hrs	
Prerequisites: Drafting 112 and Mechanical Technology 111. Introduction to tool design, tool drawings, tools, fourteen steps to design a tool, the workpiece, locators, clamps, guide bushings, bushing plates, support jacks, actuating cams, controls machine components, bases, mounting feet, fasteners, dimensions and notes, bill of material, the design process, types of tools. (3-6)		
Dr 114 Tool Design	5 Sem Hrs	
Prerequisites: Drafting 112 and Drafting 113. May be taken concurrently with Drafting 113. This course is a continuation of Drafting 113. (2-7)		
Dr 115 Die Design	5 Sem Hrs	
Prerequisites: Drafting 114, Mechanical Technology 111, and Drafting 110. Introduction to die design, presses and press accessories, the material strip, the blank, fourteen steps to design a die, scrap strips, die blocks, blanking punches, piercing punches, punch plates, pilots, gages, finger stops, automatic stops, strippers, fasteners, die sets, dimensions and notes, bill of material, types of dies. (3-6)		
Dr 116 Die Design	5 Sem Hrs	
Prerequisites: Drafting 114 and Drafting 115. May be taken concurrently with Drafting 115. This course is a continuation of Drafting 115. (2-7)		
Dr 155 Orthographic Projection	3 Sem Hrs	
Prerequisite: None. Use of instruments, lettering, principles of orthographic projection, auxiliary views, sections, dimensioning, pictorial drawing and white printing. (1-5)		
Dr 156 Descriptive Geometry	3 Sem Hrs	
Prerequisites: Drafting 106, 111 and 112, or 155. Emphasis on space visualization and processes of solution. Problems comprise combinations of points, lines, planes, intersections, developments, warped surfaces, true angles, true size and shape, vectors, shades and shadow, and conics. (1-5)		
Dr 210 Creative Design Sketching	3 Sem Hrs	
Prerequisite: Drafting 105, or Drafting 155 and/or equivalent. The course provides opportunity to develop reasonable skill in freehand sketching, and greater awareness of its industrial application and problem solving potential. Function		
		rather than beauty of the sketch is stressed. Topics covered: Review of the multiview and pictorial projection; observation and proportion; on-the-spot sketching; emphasis techniques; exploded assemblies; design and redesign of products and processes; (problem and idea); group presentation methods. (1-4)
Dr 216 Electrical Drafting	2 Sem Hrs	
Prerequisites: Drafting 105, accompanied by Electronic Technology 214. Standard electrical symbols, elementary wiring diagrams, and electrical codes are studied and applied. (0-4)		
Surv 205 Elements of Surveying	3 Sem Hrs	
Prerequisite: Mathematics 102 or equivalent. Elements of surveying; use of equipment, measurement of distances, angles, and evaluation, analysis and use of verniers; traverses and topographic surveys and mapping. (1-4)		
Dr 290-299 Special Problems in Drafting		
(See page 51)		
ELECTRONICS		
EIn Tech 101 Industrial Electricity and Electronics	3 Sem Hrs	
Prerequisite: High school algebra or equivalent. A survey of the fundamentals of electricity and electronics. (2-2)		
EIn Tech 111 Fundamentals of DC Circuits	4 Sem Hrs	
Prerequisite: Mathematics 101 or equivalent. (May be taken concurrently.) Theory and applications of direct current electricity including resistance, basic circuit laws, magnetism, and direct current instrumentation. (3-2)		
EIn Tech 112 Fundamentals of AC Circuits	3 Sem Hrs	
Prerequisites: Electronic Technology 111, Mathematics 101. (Mathematics 102 may be taken concurrently.) Theory and applications of alternating current electricity including representation of AC wave, impedance, basic circuit computations, and alternating current instrumentation. (2-2)		
EIn Tech 115 Electronic Devices	2 Sem Hrs	
Prerequisite: Electronic Technology 111 or equivalent. (May be taken concurrently.) Study of transistors, integrated circuits, and vacuum tubes. Emphasis is placed on mathematical and graphical techniques used to describe their characteristics. (1-2)		
EIn Tech 116 Electronic Devices and Circuits	2 Sem Hrs	
Prerequisites: Electronic Technology 115, Electronic Technology 112 or equivalent. (Electronic Technology 112 may be taken concurrently.) Basic amplifiers and their characteristics. Both transistor and vacuum tube circuits are covers. (1-2)		

El Tech 150 Electronics for Scientists

Prerequisite: Mathematics 162 or equivalent. A course providing a broad background in electrical and electronic principles for the scientist who uses control systems, electronic instrumentation, and data processing in his work. Subjects covered will include the theory and application of amplifiers, power supplies, and other systems used in modern instrumentation and process control. Special emphasis will be on feedback systems and uses of operational amplifiers. (3-2)

El Tech 152 Control Theory for Scientists

Prerequisite: Electronic Technology 150. A course providing a broader background in basic control theory and application. Subjects to be covered will include fundamental control theory and applications, modern filter systems, and instrumentation schemes. (3-2)

El Tech 212 Electronic Circuits

Prerequisite: Electronic Technology 112. Study of the principles of operation and industrial applications of vacuum and gas tubes, photo-electric cells, and cathode ray tubes. Basic circuits using these tubes are studied. (3-2)

El Tech 213 Solid State Devices

Prerequisites: Electronic Technology 112 and 116. Study of the theory and applications of transistors and other semi-conductors. The practical uses of these devices in industrial and communications circuits are emphasized. (2-2)

El Tech 214 Design of Electronic Circuits

Prerequisite: Electronic Technology 213. Elementary principles of operation of rectifiers, amplifiers of various types, modulation, demodulation and detection are studied. (3-2)

El Tech 215 Electronic Control and Automation

Prerequisites: Electronic Technology 241 and 213. Automatic control devices including regulating and automatic feed-back systems are studied. Induction heating, resistance welding, process timing, and similar circuits are examined. (3-2)

El Tech 221 Electrical and Electronic Measurements

Prerequisites: Physics 112, accompanied by Electronic Technology 116. A study of the design, application and limitations of direct and alternating current, and electronic measuring instruments. (2-2)

El Tech 231 Electronic Fabrication

Prerequisite: Electronic Technology 216. Use of electrical hand tools, wiring, safety practice, techniques of chassis fabrication, performance testing, and trouble shooting. (1-4)

El Tech 235 Electrical Circuits

Prerequisite: Mathematics 101 or equivalent. Basic direct and alternating current circuits and their applications in machine operation and control; electrical measuring instruments. (3-2)

El Tech 241 AC and DC Machines and Controls

Prerequisite: Electronic Technology 112. Basic study of AC and DC machines and their controls. (2-0)

El Tech 252 Basic Industrial Instrumentation

Prerequisites: Electronic Technology 116. (Electronic Technology 213 may be taken concurrently.) A study of components of applied instrumentation, including transducers, processing systems and recorders. Mechanical, electrical, hydraulic, pneumatic, acoustical, and photometric topics are covered. (3-2)

El Tech 290-299 Special Problems in Electronic Technology

(See page 51)

INDUSTRIAL SUPERVISION

IS 110 Industrial Supervision

3 Sem Hrs
(Required if Industrial Supervision 294 is not elected.) Prerequisite: None. This course is designed to give the student a general understanding of the following areas: Introduction to management; organization structures; product development; plant location and equipment; cost controls, material and production controls; personnel administration and management. (3-0)

IS 112 Production Planning and Control

4 Sem Hrs
Pre-production planning of the most economical methods, machines, operations, and materials for the manufacture of a product. The planning, scheduling, routing, and detailed procedure of production control (4-0)

IS 114 Plant Layout

3 Sem Hrs
Prerequisite: Industrial Supervision 112. Arrangements of stock, machines, layout of aisles, and use of space and material handling for the highest efficiency of production. (3-0)

IS 116 Materials Handling

3 Sem Hrs
Prerequisite: None. A survey of materials handling elements, the unit load packaging, bulk handling, the economics of materials handling, improving existing handling methods, justification for handling equipment, special handling techniques and the management of the materials handling divisions in industrial organizations. (3-0)

IS 118 Industrial Safety

2 Sem Hrs
Safety fundamentals as related to the economics of accident prevention, analysis of accident causes, mechanical safeguards, fire prevention, plant house-keeping, occupational diseases, first aid, safety organization, protective equipment, and the promotion of safe practices. (2-0)

COMMUNITY SERVICES

COMMUNITY EDUCATION PROGRAMS

Delta College Community Education serves the needs of the community which are not met by two year degrees or academic certificate programs.

Community Education includes self-development, individual goals, community development and goals of organizations and groups.

Self-Development describes the activities designed to change and improve the lives of individual participants through planned educational and counseling experiences.

Community Development describes the activities which focus upon cooperative efforts with community organizations, associations and agencies to improve the social, physical, economic, and political environment of the community, such as housing, transportation, air pollution, human relations, and public safety.

Community Education opportunities are primarily designed for adults and offer learning experiences more conducive to adult learning than conventional methods.

PERSONAL COUNSELING

This service provides opportunities for development through individual and group counseling. This includes aptitude-interest testing, G.E.D. counseling, career information, job placement, individual interviews, as well as education direction.

Included here are courses and workshops offered through the Delta College Human Relations Institute.

EDUCATIONAL EXTENSION

This service is designed to increase educational opportunities to the community by locating classes in the community itself. This is done through establishing evening classes in a variety of locations, including classes in cooperation with local schools, churches, government agencies, private associations, television courses through Channel 19 and neighborhood extension centers.

EDUCATION EXPANSION

This service provides educational programming designed to reach beyond the limitations of College credit restrictions. The programs stress the upgrading of skills as well as the learning of new career occupations.

SOCIAL OUTREACH

This service deals with the continuing social problems of our tri-county community and seeks answers to the critical issues facing our service area.

CULTURAL DEVELOPMENT

This service offers opportunities for individual community members to participate in a wide variety of cultural activities including arts tours at home and abroad, drama courses on location in community theaters, crafts and arts programs both on campus and in the community and self-development through other forms of creative involvement.

LEISURE TIME ACTIVITY

This service encourages community members to participate in a variety of hobby and recreational activities, such as sports instruction, senior citizens' activities, and such unusual courses as Interior Decoration, Taxidermy, Photography, Yoga, Poodle Grooming, Hypnotism, etc.

CONTRACT PROGRAMS

Business and Industry often need special training or retraining programs for employees whose jobs have become obsolete or for newly created positions. Among these we would include programs for the upgrading of minority and disadvantaged individuals. This service offers the individual corporation or business an opportunity to structure a course to meet their specific training needs.

Specialized new training programs from 5 to 20 weeks have been run for the following companies:

Saginaw Steering Gear
Saginaw News
Saginaw Public Schools
Dow Chemical
Saginaw Model Cities
Saginaw Housing Commission
Unity Urban Non Profit Housing Corp.

Interested corporations and business should contact Dr. Ronald J. Crossland, Community Education Office, ext. 219.

CERTIFICATE PROGRAM ACTIVITIES

Community Education offers the following certificate programs. Upon completion of the requirements for each sequence, a certificate is awarded to the student. Many employers encourage employee education through tuition reimbursement for these programs.

Blue Print Reading
ABC Shorthand
Law Enforcement

Auto Mechanics' Series
Electricians' Series
Professional Engineering Refresher

Labor Union Education
Legal Secretaries
Medical Assistant
Certified Professional Secretaries
Stationary Boiler Fireman

Income Tax Practices
Chartered Life Underwriters
Home Builders Series
Plumbing

WOMEN'S PROGRAM

The Women's Program offers day and evening, short and extended courses, seminars, and workshops designed to provide enrichment for adult women. Women's Programs also operate as a referral agent for those who wish to pursue an academic degree. Representative programming includes Clothing & Design, Food & Nutrition, Home Management & Child Care, Interior Decor & Home Furnishings, Writing, Crafts & Arts, and Holiday Idea Workshops. Courses are offered for both service and certificate credit.

AWARENESS FOR WOMEN

A lecture series entitled Awareness For Women, provides an insight into the changing role of women in modern society and includes facets of expression and self-realization for today's woman to explore.

Professional lecturers include psychologists, psychiatrists, sociologists, economists, authors, physicians, etc. Since all women cannot find the flexibility of scheduling classroom work into daily schedules, the lecture series is incorporated with Opportunity for Outreach, a course that does not require attendance on the college campus.

WOMEN'S OPPORTUNITIES WORKSHOP

Since millions of American women are working and millions of others want to, the Women's Opportunities Workshop provides assistance in the following areas: pre-work insight, awareness of work opportunities that exist, testing and counseling, transition into academic work, training for a new career and upgrading previous training skills.

Refresher courses are offered in economics, oral communications, math, spelling, correct English usage, grooming, human relations, and the art of self selling and acquiring confidence.

Opportunities for training exist in the following areas: Clothing Alterations, Day Care, Retailing, Typing and Filing, Nutrition Aid, and Introduction to Executive Maintenance, Beginning Typing and Filing, Typing and Filing Enrichment, Beginning Stenography, Stenography Enrichment, The Psychology of the Office, Beginning Office Machines, Teacher Aid Training, Beginning Real Estate Sales. Along with the development of a Counseling Center, G.E.D. Preparation and Qualification Testing will be included in future workshops. To date, The Workshop has assisted ADC (Aid to Dependent Children) mothers in training and counseling to help remove them from the welfare rolls.

LET US KNOW

All workshop training, special courses, and seminars on contemporary life are open to the community. Programs for Women are developed upon request and

as a response to need. If you would like the Office of Women's Programming to offer a particular course or program, contact Delta College.

CONFERENCE DEVELOPMENT

The Office of Conference Development provides services to business and industry, professional groups, educational associations, community organizations, college-related groups and the general public in the planning of conferences, including workshops, seminars, institutes, symposia and lectures.

Conference services include:

1. Planning program content and format, speakers and consulting.
2. Costs and registration fees.
3. Housing, meals and meeting rooms.
4. Programs, announcement, registration materials, meal tickets, badges and other items.
5. Mailing programs and registration materials.
6. Registration.
7. Audio-visual aids and recording equipment with a trained operator.
8. Publicity and public relations.
9. Tours and entertainment.
10. Conference rosters.
11. Publication of conference proceedings and results.
12. Open and closed circuit television.
13. Evaluation of conference.

ADVISORY COMMITTEES

The advisory committees at Delta College serve as a bridge of communication between the educator and the career world.

Advisory Committees consist of employers, organizations and employees within a particular field, as well as Delta College personnel. They assess and evaluate manpower needs, immediate and future, and provide descriptions of career skills needed. Established programs with similar objectives are researched or data is collected about the need for new programs.

In the development and evaluation of career entry and up-grading programs, there are over 350 tri-county residents representing their specific fields of work, including health, technical, business and public service areas.

The Advisory Committee is a vital part of the function upon which a community college builds its academic programs.

CULTURAL ACTIVITIES

Cultural interests of the Delta College Community are given a wide range of expression. Perhaps most typical of the numerous cultural events are those found in the Summer Festival of Arts, which offers ballet, creative writing, a summer conservatory of music, a seminar in theater, crafts & arts and photography. Also a part of the summer program are the Concerts in the Court, chamber music and opera which have been widely acclaimed by patrons of the Saginaw Valley Area.

The Delta College Fine Arts Series has brought to the campus a variety of lecture and concert performances throughout the school year. Available to the general public, these events are offered to students at a nominal cost. Also available to students at a nominal cost or with no admission charge, are most of the major musical, theatrical, and artistic events of the larger communities. Displays of art by Delta students and by students of public and parochial schools, are supplemented by "Traveling Shows" designed to enrich the aesthetic experience of Delta students.

WUCM-TV (CHANNEL 19)

Television facilities at Delta College provide an educational opportunity for the tri-county area comparable to that available in some of the largest metropolitan centers of the United States.

As a logical extension of the community service responsibility of a community college, Delta College owns and operates WUCM-TV Channel 19, a public broadcasting station, affiliated with national and regional educational networks.

The responsibility of television at Delta College is to provide educational, cultural and public affairs programs to the residents of the district which Delta College serves. To fulfill this responsibility, WUCM-TV broadcasts daily instructional programs to public and parochial schools; training programs to business and industry; children's programs, cultural programs, and public affairs programs to the general home audience.

TOURS AND SPEAKERS

College-wide tours are available to all interested persons and are conducted by either the student Tour Bureau or representatives of Community Affairs Office. Special tours of television, WUCM-TV (Channel 19), and the Data Processing Center, are conducted by experienced staff members. Tours range from 30 to 90 minutes and may be combined with a planetarium showing.

Delta College's Speakers Bureau provides speakers for any professional, civic or service organization and for schools and interested groups. College faculty and staff members are available to speak on a wide range of topics.

For more information, contact the College Relations Office.

PLANETARIUM

The Delta College Planetarium is located in Room B-203 at the northeast corner of the college. The facility is available to organizations and groups of individuals without charge.

Arrangements for planetarium shows are made through the College Relations Office, Ext. 206. The sky is presented as it appears at any time of the day or night for any time in the past or future from any point on earth. The Planetarium can improve on nature with projection devices that are helpful analytical tools necessary in the study of space science and by relating astronomy to other subjects such as mathematics and geography.

By showing the student what happens and how to observe it, the Planetarium offers an experience which aids clear conceptualization, faster learning and longer retention.

As a visual aid the facility is not an end in itself but one which, when used wisely in conjunction with the traditional classroom in pre-planetarium orientation and follow-up, can provide an excellent program involving hundreds of students each year.

Some areas in which the Planetarium can be helpful are:

- 1. Teachers' Workshops.** A series of programs to acquaint elementary and high school teachers with the nature of space and the astroseience lab. (Sponsored by Senior University.)
- 2. Elementary School.** A series of programs integrated into their units in grades three to eight.
- 3. Special Events.** A special program for general education concerning a certain event, either natural or planned, in space.
- 4. Clubs.** Special programs devoted to particular interest of these groups in such areas as celestial navigation, radio astronomy and extra-terrestrial life.
- 5. Community.**
 - Adult lecture series.
 - Saturday morning youth groups.
 - Evening industrial, civic, and general community groups.
- 6. Testing.** Provided for groups taking part in the evaluative program, to determine the amount of measurable learning taking place during a particular Planetarium visitation.

COMMUNITY DEVELOPMENT

Delta College faculty, students, and staff, as well as supportive physical resources, make community research and study available to qualified organizations. Faculty and staff combine as individual and interdisciplinary consulting teams to provide a further source of community development.

Studies as diverse as the needs of senior citizens to computerizing high school administrative functions are typical community development services.

The data census bank at Delta College, for example, has stored on computer the latest census information. This information will be made available to the business-industrial sector of the tri-counties upon request.

Another example is the Student Volunteer Program. Over 150 students volunteer their time in agencies as various as Legal Aid, inner-city projects, hospital units, senior citizens organizations and many other federal programs and state and local agencies.

At present, several offices are involved in community development. However, primary responsibility rests with the Offices of Research and Development, Community Affairs, and College Relations.

FACULTY

EMERITUS FACULTY

Devol, Lloyd (1961-1963)
Elkin, Cova (1961-1968)
Ewing, Meta (1961-1964)
Freed, Samuel (1961-1969)
Fritzemeier, Hulda (1961-1968)
Gase, Florence (1962-1968)
Hellmuth, Erma (1961-1963)
Omans, Margaret (1961-1963)

Parks, Dr. Harry (1961-1970)
Pawling, John (1961-1969)
Plum, Kathleen (1961-1966)
Williams, Fred (1961-1963)
Wilson, George (1961-1968)
Wilson, Zane (1961-1966)
Woodford, Marion (1961-1971)

Abell, Martin T.
B.S. University of Notre Dame
M.S. Wayne State University

Instructor of Chemistry

Adams, Lorne P.
B.A.; M.A. University of Michigan

Associate Professor of Physics and Chemistry

Alberda, Maurice S., Jr.
B.A. Kalamazoo College
M.A. University of Michigan

Associate Professor of English and
Chairman of English Division

Altenhof, Carl L.
B.S. California State College
M.S. University of Michigan

Associate Professor of Biology

Anderson, Geraldine R.
B.A. Michigan State University
M.A. University of Michigan

Assistant Professor of English

Argyle, Roselyn D.
A.A. Flint Junior College
B.A. Saginaw Valley College

Clinical Associate, Division of Nursing

Arman, Harold D.
B.S.; M.A. Western Michigan University

Assistant Professor of Political Science

Augustine, John F.
B.A. University of Michigan
M.A. New York University

Assistant Professor of English

Ballard, Constance

R.N. Columbia University
B.A. Saginaw Valley College

Clinical Associate, Division of Nursing

Baragary, Sister Donel Marie

B.S.N. Mercy College of Nursing

Clinical Associate, Division of Nursing

Barber, William E.

B.S.; M.A. Western Michigan University

Associate Professor of Law Enforcement

Bauer, Chal S.

Registered Radiologic Technologist
University of Michigan Medical Center

Coordinator of Radiologic Technology

Benz, Mary H.

R.N. St. Joseph's Hospital School of Nursing
Ph.B.; M.A. University of Detroit

Lecturer, Division of Nursing

Berry, Darrell R.

A.S. Flint Junior College
B.S. Ferris State College

Assistant Professor of Machine Tool

Blackwell, Dana E.

B.A. Radford College
M.A. Virginia Polytechnic Institute

Assistant Professor of English

Blair, Michael T.

B.A. Northwest Missouri State College
M.A. Washington State University

Instructor in English

Boedecker, Karl A.

B.A.; M.A. Michigan State University

Assistant Professor of Economics

Beoke, Robert M.

B.A. University of Michigan
J.D. University of Wisconsin

Instructor in English

Boesenecker, Louise M.

B.S.N. Mercy College of Nursing

Clinical Associate, Division of Nursing

Borgman, Clayton H.

B.A. Hope College
M.A. Western Michigan University

Assistant Professor of Biology

Breed, Charles A.

B.S. Western Michigan University
M.S. University of Wisconsin

Associate Professor of Art

Brigham, Harold E., Sr.

Machine Tool Technician

Brinn, John H. A.A. Freed Hardeman College B.S.; M.A. Murray State University	Associate Professor of Mathematics	Corliss, Bruce C. B.S.; M.S. University of Michigan	Associate Professor of Geology
Brinson, JoAnn B.S.N. University of Nebraska School of Nursing	Lecturer, Division of Nursing	Crowell, Jack L. B.S.; M.S. Michigan State University M.S. University of Illinois	Assistant Professor of Mathematics
Butcher, Larry D. B.S.; M.A. Central Michigan University	Instructor In Art	DeCarbo, Michael A. B.A.; M.A. California State College	Instructor in English
Cady, Loren E. A.A. Bay City Junior College B.M. Oberlin College M.M. University of Michigan	Associate Professor of Music	Denman, Charlotte A. B.S.; M.S. Indiana University	Associate Professor of Physical Education and Recreation
Cahill, Brendan, R. B.A.; M.A. University of Southern California M.A. University of Michigan	Associate Professor of English	DeVinney, Robert H. B.S. Albion College M.A. University of Colorado M.A. University of Kansas	Associate Professor of Mathematics
Campbell, Barry D. B.S. Eastern Michigan University M.S. Indiana University	Associate Professor of Physical Education and Health	Doll, Louis W. B.A.; M.A.; Ph.D.; B.A.L.S. University of Michigan Ph.D. (Honorary) Nihon University	Professor of History
Carlson, Barry A. B.A.; M.A. University of Wisconsin	Instructor in Geology	Dolsen, Jessie R. R.N. St. Joseph's Mercy Hospital B.S.N. Central Michigan University	Assistant Professor of Nursing
Carrico, Paul E. B.A. University of Notre Dame M.A. Harvard University	Associate Professor of Political Science	Drumm, Pauline K. B.A. Eastern Michigan University M.A. Aquinas College	Associate Professor of Journalism and English
Catacosinos, Paul A. B.A.; M.S. University of New Mexico	Instructor in Geology	Drury, Patricia B.A. Occidental College M.A. Claremont College	Associate Professor of History
Charm, Ellen J. B.S.N. Boston University School of Nursing	Clinical Associate, Division of Nursing	Duckworth, Gene R. B.S. Northwestern University M.A. Central Michigan University	Associate Professor of Speech and Chairman of Humanities Division
Cheger, Jean G. B.S.; M.Ed.; Ed.D. Wayne State University	Associate Professor of Sociology	Dungy, Wilbur L. A.S. Jackson Junior College B.S.; M.S. University of Michigan Ph.D. Michigan State University	Associate Professor of Biology
Christensen, James A. A.A.S.; B.S. Ferris State College M.A. Michigan State University	Assistant Professor of Business	Dunn, John A. B.A. Grambling University M.A. University of Toledo	Instructor in Economics
Cisky, Carl F. B.A.; M.A. Western Michigan University	Associate Professor of Geography	Ebach, Faye A. B.S.N. University of Michigan	Clinical Associate, Division of Nursing
Conway, Lynn V. B.A.; M.A. Michigan State University	Associate Professor of Physical Education and Chairman of Health, Physical Education and Recreation Division		

Eggleston, Patricia C. B.A.; M.A. University of Michigan	Associate Professor of Speech	Gainey, Frances B. B.S. Central Michigan University M.S. Michigan State University	Associate Professor of Business
El Ashhab, Julie A. B.S.N. Michigan State University	Lecturer, Division of Nursing	Gibson, Andrew H. B.S. University of Michigan M.A. Michigan State University M.S. University of Minnesota	Associate Professor of Biology
Ellison, Gerald V. A.S. Amarillo College B.A.; M.A. Texas A & M University	Assistant Professor of English	Glynn, Lawrence E. B.A. Marquette University M.A. Wayne State University	Associate Professor of History
Ely, Pauline R.N. Baptist Memorial Hospital School of Nursing B.S.N. University of Colorado	Clinical Associate, Division of Nursing	Godard, Joseph M. B.A.; M.A. Wayne State University	Associate Professor of Psychology
Enger, Eldon D. A.S. Alpena Community College B.S.; M.S. University of Michigan	Associate Professor of Biology	Gosser, Jon W. B.S.; M.S. University of Washington	Assistant Professor of Psychology
Eskilsen, Richard C. A.D. Delta College B.A.; M.A. University of Michigan	Assistant Professor of Speech	Grau, Gideon	Director of Summer Conservatory of Music
Fayerweather, Mary K. B.A. Michigan State University M.A. Butler University	Instructor in History	Greene, G. Nelson B.A. Alma College M.A. University of Michigan	Assistant Professor of Science
Ferrando, Richard J. B.S. Michigan Technical University M.B.A. Wayne State University	Associate Professor of Business	Gronewold, Joan B. B.A.; M.A. University of Michigan	Assistant Professor of English
Feusse, Floyd A. B.S. Central Michigan University M.A. Colorado State College	Associate Professor of Business	Grossman, Genevra H. B.A. Allegheny College M.A. University of Michigan	Associate Professor of English
Flattery, John M. B.S. Western Michigan University	Instructor in Radiologic Technology	Guild, William S. B.A. New York State Teacher's College M.A. University of Michigan	Instructor in Construction Technology
Fox, Phyllis B.S.N. University of Michigan	Clinical Associate, Division of Nursing	Gustin, Sarah R. B.S.; M.M. Michigan State University	Assistant Professor of Music
Freiwald, Thomas B. B.S.; M.S. Stout State University	Assistant Professor of Architectural Technology	Hackbarth, Clarence W. B.A. Elmhurst College M.S. University of Wisconsin	Associate Professor of Sociology
Frieserger, Rose B.S. Central Michigan University	Lecturer, Division of Nursing	Hall, Gerald L. B.A. Michigan State University	Assistant Professor of English
Frontjes, Leslie B.S.N. Michigan State University	Clinical Associate, Division of Nursing	Halog, Donald B. B.S. University of San Francisco M.A. University of Illinois	Assistant Professor of English

Hamontree, Peggy E. C.B.S. International College B.A. Butler University M.S. Indiana University	Assistant Professor of Business	Hopfensperger, James F. B.S. Wisconsin State College M.S. University of Wisconsin	Assistant Professor of Art
Hanna, Gayle D. B.S.N. University of Michigan	Instructor in Nursing	Howard, David C. B.S. Ball State University M.A. Indiana University	Associate Professor of Economics
Harman, William C. B.A. Findlay College B.B. Chicago Theological Seminary M.A. Bowling Green University	Assistant Professor of English	Hullum, Valerie J. B.A.; M.A. Wayne State University	Instructor in Speech
Heinert, J. Sumitra B.A. Isabella Thoburn College M.A. Allahabad University	Assistant Professor of Geography	Jacobs, Carol A. B.S.; M.S. Indiana University	Assistant Professor of Business
Henning, Otto E. B.S. Central Michigan University M.A. University of Michigan	Associate Professor of English	Jaeger, Don Th. B.M. Oklahoma City University	Assistant Professor of Music
Hieber, William R. B.S. University of Dayton M.A.A. Xavier University	Assistant Professor of Business	Jerosz, Mitchell H. B.A.; M.A. University of Detroit	Instructor in English
Hilbert, Robert J. B.S. Oglethorpe University	Assistant Professor of Biology	Jernstadt, Phyllis A. A.A.; B.S. Ferris State College	Assistant Professor of Dental Assisting
Hoerneman, Calvin A. B.A. Bethany College M.A. Michigan State University	Associate Professor of Economics	Keicher, Robert F. A.A. Jackson Junior College B.A. Western Michigan University M.A.T. Indiana University	Assistant Professor of Mathematics
Hoffmann, John T. B.S.; M.S. Stout State University	Assistant Professor of Mechanical Drafting	Keil, Martha J. B.A. University of Kansas M.A. Central Michigan University	Assistant Professor of English
Holcombe, Michael L. B.S.E.E. University of Florida M.S.E.E. Montana State University	Assistant Professor of Electronic Technology	Keim, Isaac W.J. III B.B.A. Cleveland State University M.A. Michigan State University M.B.A. Central Michigan University	Assistant Professor of Business
Holzhei, Don E. B.S. Michigan State University M.S. Cornell University	Instructor in Mechanical Technology	Kennedy, Crawford E. B.S.; M.A. Michigan State University	Associate Professor of Physical Education
Holzschu, Betty A. B.A. Western Michigan University M.A. University of Denver	Instructor in Speech	Kennedy, David R. B.A. Southern Illinois University M.A. Iowa State University	Instructor in Psychology
Hooker, Clarence B.A.; M.A. Western Michigan University	Instructor in Political Science	Keyser, Dale F. B.S. Central Michigan University M.A. University of Michigan	Associate Professor of Business and Chairman of Business Division

Kilar, Jeremy W. B.A. University of Detroit M.A. Central Michigan University	Assistant Professor of History	
Klein, Richard E. B.A.; M.A. Michigan State University	Associate Professor of Economics and Chairman of Social Science Division	Associate Professor of Speech
Kleinsmith, Wilbert C. B.A. Eastern Michigan University M.S. University of Michigan	Associate Professor of Mechanical Technology and Chairman of Technical Division	
Koblas, Paul E. B.S. University of California M.S.; Ph.D. University of Oregon	Instructor in Physics	Professor of Business
Kormelink, J. Richard B.A. Indiana University M.S. University of Utah	Assistant Professor of Biology	Lab Technician, Science Division
Kostoff, John S. B.S.; M.S. Michigan State University	Associate Professor of Mathematics	Assistant Professor of English
Lagden, Olive L. A.A. Bay City Junior College B.A.; M.A. University of Michigan	Associate Professor of French	Instructor in English
Lange, Crystal M. B.S.N. University of Michigan M.S.N. Wayne State University	Associate Professor of Nursing	
Laughner, Donald L. B.S.; M.Ed. Edinboro State College M.A. Louisiana State University	Associate Professor of Mathematics	
Leaman, Jacqueline R.N. Saginaw General Hospital	Lab Technician, Division of Nursing	
Leek, E. Paul B.S.; M.S. Michigan State University	Assistant Professor of Law Enforcement	
Lees Robert N. B.S.; M.B.A. Central Michigan University	Associate Professor of Business	Assistant Professor of Business
Leeson, Marjorie M. B.S. Western Michigan University M.A. University of Michigan	Associate Professor of Business	Instructor in English
		Instructor in Art

McGaw, Richard A. B.A. Albion College M.A. University of Michigan	Assistant Professor of Speech	Moskal, Lavonne B. R.N. Saginaw General Hospital B.A. Saginaw Valley College	Clinical Associate, Division of Nursing
McGinty, James M. B.A. University of Michigan M.A. Central Michigan University	Assistant Professor of English	Most, Clark F., Jr. B.S. Central Michigan University Ph.D. Washington State University	Assistant Professor of Chemistry
McGivern, Ralph M. B.A. University of Michigan M.B.A. Central Michigan University	Assistant Professor of Architecture	Muller, Donald J. B.B.A.; M.A. Western Michigan University	Instructor in Business
McKinnon, Murlene E. B.A.; M.A. Michigan State University	Assistant Professor of Speech	Niemann, Richard F. B.S.; M.A. Ball State University	Instructor in Business
McNeal, Dennis E. B.S. Northern Illinois University M.A. Michigan State University	Associate Professor of Business	Northrup, Richard H. B.A. Alma College M.S. Michigan State University Ph.D. University of Minnesota	Associate Professor of Biology and Chairman of Science Division
McPhee, Donald A. B.S. Central Michigan University M.A. University of Michigan	Assistant Professor of Mathematics	Ortenburger, Thomas R. A.A. Riverside City College B.A.; M.A. University of California	Instructor in Sociology
Mee, Robert M. B.S. Kansas State Teachers College M.A. University of Missouri	Assistant Professor of Spanish	O'Toole, Patricia A. B.A. University of Detroit M.A. University of Michigan	Assistant Professor of Physical Education
Mertz, Caroline M. R.N. Saginaw General Hospital B.S. Saginaw Valley College	Assistant Professor of Nursing	Paine, Carolyn F. B.S.N. Michigan State University	Clinical Associate, Division of Nursing
Miller, Richard E. B.S.; M.A. Central Michigan University	Assistant Professor of Architectural Technology	Paquin, Joseph R.E. Registered Professional Engineer	Assistant Professor of Drafting and Design Technology
Miotto, Donald A. B.S. Eastern Michigan University M.A. University of Michigan	Associate Professor of Drafting	Peregrino, Santiago B.S.; M.A. University of Texas	Instructor in Political Science
Molter, Leticia R. B.A. University of the Philippines M.A. National Teachers College M.A. University of Missouri M.A.; Ph.D. University of Pittsburgh	Associate Professor of English	Phillips, Velma J. R.N. Saginaw General Hospital B.S. Eastern Michigan University	Assistant Professor of Nursing
Moore, Paul D. B.A.; M.A. Rutgers University	Assistant Professor of Political Science	Prentice, Richard W. B.S.Ed.; M.Ed. Ohio University	Assistant Professor of Physical Education and Recreation
		Radey, Charles R. B.A. University of Notre Dame M.A. University of Maryland	Instructor in English
		Radlinski, Paul D. B.S.Ed.; M.Ed. Bowling Green University	Assistant Professor in Physical Education and Health Education

Redington, Elizabeth R. B.A. Nasson College M.A. Syracuse University	Instructor in English	
Remington, Newell H. B.S.; M.A. Central Michigan University M.A. Michigan State University	Associate Professor of Mathematics	Assistant Professor of Nursing and Chairman of Nursing Division
Renker, Fred W., Jr. B.A. University of Notre Dame M.A.T. Duke University	Assistant Professor of English	Assistant Professor of Business
Roberts, Betty J. B.S.; M.A. Central Michigan University	Instructor-Coordinator for Office Occupations	Assistant Professor of English
Roberts, Raymond B.A.; M.A. Wayne State University	Instructor in Speech	Instructor in Chemistry
Roelofs, Gary B. B.A.; M.A. Michigan State University	Instructor in English	Assistant Professor of Nursing
Rogers, Claudia A. R.N. University of Pennsylvania School of Nursing B.A. Saginaw Valley College	Clinical Associate, Division of Nursing	Instructor in Chemistry
Roman, Robert M. B.A. University of Michigan M.A. Columbia University Ph.D. University of Houston	Professor of Psychology	Assistant Professor of Business
Ross, Frederick C. B.S.; M.A. Wayne State University	Assistant Professor of Biology	Assistant Professor of Biology
Roth, Norma B.S. Capital University	Clinical Associate, Division of Nursing	Assistant Professor of Mathematics
Sanker, Louis M. B.A.; Ph.D. University of London	Associate Professor of Philosophy	Instructor in English
Schmidt, Alvin H. B.S. Stout State University	Assistant Professor of Drafting	Lab Technician, Division of Nursing
Schuitman, Jerry A. A.S. Grand Rapids Junior College B.S.; M.A. Western Michigan University	Assistant Professor of Mathematics	Lab Technician, Automotive
Schwartz, Arnold A. A.S. Bay City Junior College B.S.F.; M.F. University of Michigan	Assistant Professor of Mechanical Technology	Assistant Professor of Physical Education and Health Education
		Associate Professor of German and Russian

Streib, William J. B.S.; M.A. University of Iowa	Associate Professor of Electronic Technology		
Stry, Edward J. B.A. Canisius College M.Ed. University of Buffalo Ed.D. Michigan State University	Associate Professor of Chemistry		Assistant Professor of Mathematics
Stryker, Rhosan D. B.A.; M.A. Michigan State University	Instructor in Business		Clinical Associate, Division of Nursing
Sveller, Gloria A. R.N. Hurley Hospital School of Nursing B.S. Michigan State University	Lecturer, Division of Nursing		Assistant Professor of Nursing
Tait, Marjorie A. B.S.N. Wayne State University M.A. Columbia University Teachers College	Assistant Professor of Nursing		Assistant Professor of Chemistry
Thayer, Russell L. B.S.; M.A. University of Michigan	Assistant Professor of Art		Lecturer, Division of Nursing
Thompson, Elanore M. B.S. Central Michigan University M.S. Michigan State University	Associate Professor of Physical Education and Health Education		Assistant Professor of Political Science
Tingstad, Jerry B. B.S.; M.S. University of Wisconsin	Instructor in Political Science		Assistant Professor of Political Science
Tinker, Robert N. B.S. Michigan State University M.S. Purdue University	Assistant Professor of Mechanical Technology		Assistant Professor of Geography
Treadway, Jean S. B.S.; M.S.A. Women's College of the University of North Carolina	Instructor in Health, Physical Education and Recreation		Lecturer, Division of Nursing
Vanciu, Barbara B.S.N. University of Michigan	Lecturer, Division of Nursing		Assistant Professor of Nursing
Verhanovitz, James A. B.S. Saginaw Valley College M.A. University of Michigan	Instructor in Mathematics		Instructor in Political Science
Walker, Westbrook A. B.A. Miles College M.S. Central Michigan University	Assistant Professor of Physics and Chemistry		Assistant Professor of English
			Assistant Professor of History

ADMINISTRATIVE STAFF

Anderson, Douglas M. A.A. Flint Community College B.A.; M.A. Michigan State University	Associate Dean of Learning Resources	DuBois, Karl F. B.S. Ferris State College M.A. Western Michigan University	Dean of Community Affairs
Arnold, M. Gene B.A. Alma College M.A. Michigan State University	Administrative Dean	Duguid, Ellsworth J. B.S. State University of New York at Brockport M. of Ed. at Buffalo	Assistant Dean of Students
Ballard, William J. B.S. Auburn University M.S. Syracuse University	Director and Station Manager, Television	Ferret, Sharon K. A.A. St. Clair Community College B.A.; M.A. Western Michigan University	Acting Assistant Dean for Instruction
Barckholtz, Judy G. B.S. Dr. Martin Luther College	Assistant to the Academic Dean	Fisher, John M.	Director of Food Services
Black, Ronald A. B.A. Alma College M.A. University of Michigan	Program Director, Television	Fuller, John B.S.; M.S.; Ed.S. Michigan State University Ed.D. Duke University	Registrar
Briggs, John E. B.A. Michigan State University M.A. Eastern Michigan University	Director of Conference Development	Glover, John T. B.S.; M.S. Indiana University	Director of Student Activities
Carlyon, Donald J. B.S. University of Nebraska Doctoral Program, University of Michigan	President	Goodburne, Bruce N. B.B.A. Michigan State University	Director of Housing and Assistant to the Director of Financial Aides
Ceglarek, Frances	Assistant to the Registrar	Harmer, Janice L. B.A. Louisiana State University	Supervisor, Women's Opportunities Workshop
Cesarz, Gerald J. A.A. Bay City Junior College	Coordinator -- Management Programs	Haskell, Thomas E. B.A. Penn State University M.S. Syracuse University	Operations Manager, Television
Conway, Lynn V. B.A.; M.S. Michigan State University	Director of Athletics	Heatley, G. Lynn B.S. Michigan State University M.S. Cornell University	Consultant
Corbishley, Elizabeth A. B.A.; M.A. Michigan State University	Associate Dean for Counseling	Homeister, Owen E. B.A.; M.A. Miami University	Associate Dean for General Education
Crossland, Ronald L. A.A. Bay City Junior College B.S. Central Michigan University M.A. Michigan State University Ph.D. Michigan State University	Assistant Dean for Community Education	Jankowski, Jill A. B.A. Duquesne University	Assistant to the Director, College Relations
Crovella, Michael L. B.A. Michigan State University	Business Manager	Kern, Palmer B. B.A.; B.S. Western Michigan University	Dean of Student Affairs
		Krafft, John H. B.A. Albion College	Director, College Relations
		Krawczyk, John L. B.A. Michigan State University	Controller

Limberg, Thomas B.S.; M.A. Central Michigan University	Director of Placement	Thompson, Willie E. A.A. Bay City Junior College B.S. Western Michigan University	Administrative Assistant to the Dean of Academic Affairs and Dean of Student Affairs
Lingenfelter, John R. B.S. Shippensburg Pennsylvania State College	Bookstore Manager	Trojan, Jerry L. B.B.A. Western Michigan University	Accountant
Luce, Everett N. B.S.; Ph.C. University of Colorado L.H.D. Northwood Institute L.L.D. Central Michigan University	Special Assistant to the President	Walbridge, Harry A. B.S. Wayne State University M.A. University of Michigan	Director of Financial Aids
Micho, Aceie W. A.B. Delta College	Director of Purchasing	Wendling, Douglas F.	Vocational – Technical Coordinator
Myles, Leslie B.A. Scripps College M.A. Wayne State University	Research Associate	White, Charles E. B.B.A.; B.S.; M.A. University of Minnesota	Associate Dean for Occupational Programs
Nicholson, Betty A.	Operations Manager, Data Processing	Wolf, Martin P. B.S.; M.A. Ohio State University Ph.D. Michigan State University	Director, Research and Development
Oates, Louis S. B.A. Central Michigan University	Staff Assistant, Student Services	Woods, Raymond A.	Chief Engineer, Television
Oettmeier, Arthur J. B.S. Stout State University M.A. University of Michigan	Dean of Academic Affairs	Yankee, William J. B.S.; M.A. Western Michigan University Ph.D. Michigan State University	Executive Vice President
Paulson, Ben A. B.A.; M.A. Mankato State College	Director, Data Processing		
Reading, Willard L. B.S. Michigan State University	Director, Physical Plant		
Rock, Terrance L. A.A. Delta College B.S. Eastern Michigan University	Director of Alumni		
Saro, Marguerite B. B.S. Carnegie-Melton University	Director, Women's Programs		
Saunders, Roberta L. B.S.H.Ec. Ohio University	Assistant Food Service Director		
Scott, Dean L. B.A.; M.A. Eastern Michigan University	Director of Admissions		
Stewart, Donald A. B.S. Michigan State University	Assistant Director, Food Services		

PROFESSIONAL SUPPORT STAFFS

COUNSELORS

Bowman, Phillip J.
 A.A. Delta College
 B.A. Northern Arizona University
 M.A. University of Michigan

Counselor

Davis, David L.
 B.S.; M.A. Central Michigan University

Counselor

Hansen, Fred A.
 B.S.; M.A. Western New Mexico University
 M.S. Purdue University

Counselor

Konowalow, Stephen
 B.A. State University of New York
 M.A.; Ed.A. Central Michigan University

Counselor

Montesi, Susan J.
 B.S. Ferris State College
 M.A. Central Michigan University

Counselor

Pease, George O.
 B.S.; M.S. Stout State University

Counselor

Surfus, Evelyn M.
 B.A.; M.A.; B.S. Michigan State University

Counselor

Wirtz, Richard Lee
 B.A.; M.A. Central Michigan University

Counselor

Wolff, Harry L.
 A.A. Bay City Junior College
 B.A.; M.A. Central Michigan University

Counselor, Director of Testing

DATA PROCESSING

Gorney, Ronald S.
Smith, Betsy
 B.S. Southern Methodist University
 Ph.D. Cornell University

Programmer Analyst

Programmer Analyst

LIBRARY

Berkan, Esther I.
 B.A.; M.A. Central Michigan University

Librarian

Brow, Judith
 B.A. University of Michigan
 M.L.S. University of Michigan

Librarian

Chow, Pauline P.
 B.A.; M.S.L.S. Case — Western University

Librarian

Vilks, Zigrida
 B.A.; M.L.S. University of Michigan

Librarian

TELEVISION

Knope, David E.
 B.A. University of Wisconsin
 Honors Diploma — London Film School

Producer-Director, Television

Rapp, M. Andersen
 B.A. Colgate University
 M.S. State University of New York

Producer-Director, Television

Serumgard, Guy E.
 B.A. University of Illinois
 M.A. Michigan State University

Producer-Director, Television

Brigham, Harold	L.R.C. Technician – Biology
Brinks, Douglas	Television Technician
Cezarz, Gerald J.	Coordinator, Community Affairs
Conley, Harold	Transmitter Engineer
Eichinger, Martin	Artist
Espinosa, John D.	Student Services
Forshee, Patricia K.	Student Services
Hall, Lola	Health Nurse
Krenz, Robert	Electrician
Mahan, Mary	L.R.C. Technician – Mechanical
Merrill, Jesse E.	Photographer
Pfund, James	Plant Engineer
Roselle, Robert	Maintenance Supervisor
Ross, Donna	Evening Nurse
Saladine, Clifford D.	Television Technician
Stevens, Victor	L.R.C. Technician – Auto Technology
Thomas, Billie	Women's Education – Instructional Staff Assistant
Wagenseller, George	Studio Supervisor, Television
Waldbauer, Richard E.	Duplicating Supervisor
Weiss, Theodore	Assistant to Director, Physical Plant
Young, David T.	Artist

Academic Information	17	Continuing Education	10	Health Science	71	Placement	23
Accounting		Community Affairs Information	10 & 89	Health Services	21	Political Science Courses	81
Major requirements	35	Conservation	27	History Courses	79	Psychology Courses	81
Description of courses	52	Cooperative Education Courses	54	Housing Information	21	Publications	25
Accreditation	9	Cooperative Education Information	33	Hotel Administration	27	Public Health (Pre)	27
Administration	100	Counseling Services	91				
Admissions Information	13	Course Descriptions	51	Industrial Arts	27	Radio-Television Courses	68
Agriculture	73 & 31	Data Processing (Transfer)	31	Industrial Management	27	Radiologic Technology (X-Ray)	
Airline Hostess	35	Data Processing (Career)	36	Industrial Supervision	49 & 86	Major requirements	44
Airline Hostess (clerical)	36	Description of courses	54	Instrument Technology		Description of courses	71
Architecture and Design	27	Dental (Pre)	27	Major requirements	50	Real Estate (Major)	40
Architectural Technology		Dental Assistant	27	Description of courses	71	Real Estate Courses	57
Major requirements	47	Major requirements	43	Records and Transcripts		Refund Policy	14
Description of courses	82	Description of courses	71	Residential Construction		Residential Construction	15
Art	63	Dental Hygiene	71	Major requirements	51	Major requirements	51
Associate Degrees Information	18	Distributive Education	55	Description of courses	88	Description of courses	88
Automotive Technology		Drafting		Law (Pre)	27	Russian Course	65
Major requirements	14	Major requirements	48	Law Enforcement			
Description of courses	83	Description of courses	84	Major requirements	45	Scholarship Information	22
Automotive Service	48	Economics Courses	78	Description of courses	80	Secretarial (One Year)	34
Automotive Service (Specialist)	48	Education (See specific major)	30	Learning Resources Center	11	Secretarial	42
Aviation Courses	73	Electronic Technology		Library Science	66	Secretarial (Chemical)	41
Basic Science Courses	74	Major requirements	49	Literature Courses	59	Secretarial (Legal)	42
Biology Courses	74	Description of courses	85	Loan Funds	22	Secretarial Science Courses	57
Bookstore	23	Elementary Education	30	Mathematics Courses	69	Social Health Services Assistant	46
Botany Courses	74	Employment Information	23	Mechanical Technology		Sociology Courses	82
Broadcasting		Engineering (Pre)	27	Major requirements	50	Spanish	66
Major requirements	45	Engineering Assistant	46	Description of courses	87	Speech Courses	69
Description of courses	68	English Courses	58	Medical Assistant	39	Student Activities	24
Business Administration	30	Faculty	92	Medical Technology	27	Student Services	21
Business Career Programs	33	Filing Courses	56	Medicine (Pre)	27	Technical Career Programs	47
Business Communication Courses	56	Financial Information	22	Mortuary Science	27	Television	91
Business Machine Courses	53	Finance and Banking	37	Music Courses	66	Testing	21
Business (General) Courses	56	Fire Protection	76	Nursing (B. SC)	27	Transfer Programs	27
Business Education	27	Forestry	27	Nursing R.N.		Tuition Information	15
Business Management (Small)	37	French Courses	65	Major requirements	44	Urban Professional Assistant	
Bus Transportation	23	General Information	9	Description of courses	72	Major requirements	47
Career Programs	33	General Marketing	38	Parking	23	Description of courses	81
Calendar 1972-73	4	Geography Courses	76	Pharmacy (Pre)	27	Veterinary (Pre)	27
Chemical Technology		German Courses	65	Philosophy Courses	67	Veteran's Benefits	23
Description of courses	75	Graduation Requirements	18	Physical Education (Health)		Withdrawal Information	15
Chemistry		Major requirements	27	Major requirements	27	Who To Contact at Delta College	11
Major requirements	27	Description of courses	60	Description of courses	60		
Description of courses	75	Grading Scale	17	Physical Science Courses	78		
				Physics Courses	78		

